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Preface

The present issue of *Studies in the Linguistic Sciences* has greatly benefited from the help of the following faculty members who have refereed submitted papers and squibs: Eyamba Bokamba, Jennifer Cole, Braj B. Kachru, Yamuna Kachru, Rajeshwari Pandharipande, James Yoon, Ladislav Zgusta (all in Linguistics), José Hualde (Spanish, Italian, and Portuguese), Numa Markee (English as an International Language), Erhard Hinrichs (Universität Tübingen).

The Department of Linguistics also is grateful for support from the College of Liberal Arts and Sciences toward publishing this issue, and technical support from the Language Learning Laboratory. Last, but not least, I would like to express my appreciation to Beth Creek, Cathy Huffman, and Eileen Sutton from the Department Office, and Amy Cheatham, my editorial assistant, for their help in preparing this issue.

September 1992 Hans Henrich Hock (Editor)

Endangered languages: An appeal for publications

Studies in the Linguistic Sciences recently received the following appeal from Derek Nurse, Department of Linguistics, Memorial University of Newfoundland:

> I am writing to you with an article in the most recent issue of the journal *Language* in mind. It is based on what I would think is a reasonable set of facts and predicts that by the end of the next century most of today's languages will be extinct. At least 25% of the world's languages are in Africa, many are inadequately recorded or described. This raises the possibility that some part of these languages may just quietly slip away and we will have no or an imperfect record of them. I feel this would be undesirable. I wonder if, as Editor, you think your journal could do anything to prevent this anonymous mass exodus? Would your journal for example consider including in each issue a description of some lesser known African language, perhaps of limited length and format?

In this appeal, Nurse refers to a collection of papers entitled 'Endangered languages' that appeared in volume 68 (1992) of *Language* (pp. 1-42), and was coauthored by K. Hale, M. Krauss, L. Watahomigie, A. Y. Yamamoto, C. Craig, L. V. M. Jeanne, and N. C. England. The collection provides an excellent survey of the all too widespread phenomena of language attrition and language death, as well as of attempts to prevent these developments from occurring or to undo their effects. In addition, the collection gives a very useful survey of earlier literature. The most significant — and disturbing — part of this excellent collection of papers is the observation that more than half of the languages currently still in use are endangered in their existence.

Nurse's appeal therefore is extremely timely and significant. As editor of *Studies in the Linguistic Sciences* and as a linguist who has worked with one endangered language (spoken Sanskrit in modern India), I would like to respond to this appeal by an appeal of my own.

First, I would like to strongly encourage submissions of papers, squibs, etc. concerned with endangered languages. Since language attrition and language death is a global phenomenon, I would welcome contributions about languages from ANY area of the world.

Ideally, of course, publications on endangered languages should serve not merely as convenient data banks for linguists. They should, instead, give as full a picture of a particular language as possible. Such fuller treatment would first of all preserve data which, though not considered important in current linguistic theories, might become significant in future theoretical work. Even more important, however, is the fact that as linguists working with endangered languages, we

have — I believe — a responsibility to the speakers of these languages, or their descendants, to preserve as much of their language as possible so that, if speakers decide to revive their language, they are able to do so on the basis of our work.

This means that, ideally, we should not limit ourselves to the treatment of particular issues of grammar, sociolinguistics, etc. Even accounts following the format of the 'Lingua Descriptive Series' would not provide sufficient information. Our treatment needs to be much richer, and it needs to take care of a much larger variety of language uses, including the language of child's play, love, or even hate. Moreover, there ought to be extensive dictionaries, as well as recordings of language in use or transcripts of such recordings. I would therefore like to encourage linguists working with endangered languages to do as much work of this broader type as possible so that, if speakers decide to do so, they can draw on this work in efforts to revive their language. As the example of Modern Hebrew shows, language revival is possible — if sufficient information is available on the structure and use of the language.†

Clearly, however, we do not live in an ideal world. Many languages are dying too rapidly to be amenable to the ideally desirable in-depth treatment. Moreover, there are limitations of time and money. In many cases, therefore, individual papers are the best we can expect. I would like to hope, however, that even such limited accounts will keep in mind the ideal that our work should not just serve the needs of linguists, but should reflect a feeling of responsibility to the speakers of endangered languages, or their later descendants, who might want to reverse the effects of language attrition or language death.

September 1992 Hans Henrich Hock (Editor)

† See also Joshua A. Fishman's recent volume, *Reversing language shift* (Clevedon, Philadelphia, & Adelaide: Multilingual Matters, 1991).

Studies in the Linguistic Sciences
Volume 22, Number 1, Spring 1992

DISTINGUISHING KIND AND SET IN FINNISH*

Irja H. Alho

This paper investigates the semantic distinction that Finnish makes by two translations of the expression *six of them* in the sentence *Mark knows ten linguists, and Freddie knows six of them*. The pronoun is either in the partitive or in the elative. The partitive pronoun refers to the kind 'linguists', i.e. to linguists in general, and the elative pronoun refers to the particular set of ten linguists. It is argued that this contrast between kind- and set-denotations follows from the indefiniteness of the partitive and the definiteness of the elative. Further, it is argued that in Finnish, plural partitives refer cumulatively, and that the possibility of the quantifier depends on this property.

1. Introduction

Carlson (1977:433) observes that in (1) the pronoun *them* has two possible antecedents.

(1) Mark knows ten linguists, and Freddie knows **six of them**

In one reading the antecedent is the bare plural *linguists*, in another reading, the whole noun phrase *ten linguists*. These readings are paraphrased as (2a) and (2b) respectively.

(2) a. Mark knows ten linguists, and Freddie knows six linguists
b. Mark knows ten linguists, and Freddie knows six of the ten linguists that Mark knows

In Finnish, one can distinguish the two antecedents by using a different morphological form of the pronoun *them*. In (3a) the partitive pronoun picks out linguists in general, whereas the elative pronoun in (3b) picks out the particular set of ten linguists.

The examples in (3) show that the morphological form of the pronoun marks a semantically relevant distinction in the denotation. The descriptive terms I am using for these denotation are kinds or sets. In this paper I look for an explanation for this semantic contrast in Finnish. I argue that the kind-interpretation follows from the indefiniteness of the partitive, which is semantically related to the indefiniteness of English bare plurals and mass nouns. The set-

interpretation of the elative on the other hand follows from the definiteness of the elative.

(3) Markku tuntee kymmenen lingvistiä,
M. knows ten|ACC linguist|sg.PAR
ja Fred tuntee
and F. knows
a. heitä kuusi
them|PAR six|ACC
b. heistä kuusi
them-out-of|ELAT six|ACC
'Mark knows ten linguists, and Freddie knows six of them.'

I further argue that the quantifier following the partitive is a floated quantifier that derives from a measure phrase. The elative construction corresponds to the English partitive construction, as illustrated in (4).

(4) a. six of the linguists
b. kuusi lingvisteistä
six linguists-out-of|pl.ELAT
'six of the linguists'

In (3b) the word order could be changed so that the elative pronoun follows the quantifier, as in (5a). This word order is not possible with the quantifier plus the plural partitive, since (5b) is ungrammatical.

(5) a. kuusi heistä
six|NOM them-out-of|pl.ELAT
'six of them'
b. *kuusi heitä
six|NOM them|pl.PART

According to my hypothesis, the ungrammaticality of (6a) is due to the indefiniteness of the complement in the same way as the ungrammaticality of the English example in (6b).

(6) a. *kuusi lingvistejä
six|NOM linguists|pl.PART
b. *six of linguists

The paper is organized as follows. Section 2 deals with the basic semantic properties of plural partitives. My analysis is based on the semantic properties proposed for English bare plurals and mass nouns. I focus on the EXISTENTIAL USE and the CUMULATIVITY REFERENCE PROPERTY. In 2.1, I discuss the indefiniteness of the partitive, in 2.2 the cumulative reference, and in 2.3 the quantifiers. In section 3, I discuss the elatives. The elatives occurring as complements of quantifiers correspond in a straightforward manner to the

complements of English partitive constructions. These complements are always definite. Finally, in section 4, I contrast the use of partitive and elative pronouns.

The historical development of the partitive makes it interesting to compare its semantics with the semantics of the elative in modern Finnish. It is known that the partitive used to be a concrete separative case. Gradually the language developed a more sophisticated case system which now has two sets of locative cases. The elative case is the separative in the set of inner locative cases, as illustrated in (7).

(7)

	SG.	PL.
INESSIVE	auto-ssa	auto-i-ssa
	car-INESS	car-pl.-INESS
	'in a/the car'	'in (the) cars'
ELATIVE	auto-sta	auto-i-sta
	car-ELAT	car-pl.-ELAT
	'out of a/the car'	'out of (the) cars'
ILLATIVE	auto-on	auto-i-hin
	car-ILL	car-pl.-ILL
	'into a/the car'	'into (the) cars'

The meaning of the partitive was reinterpreted from its earlier separative meaning. According to one hypothesis, this development started with its more frequent use as an object. In this use, it started to mean a part that was separated from the whole object.

In modern Finnish, partitive noun phrases occur as objects and subjects, alternating with accusatives and nominatives. The distribution of the partitive is determined by at least the following three semantic conditions: quantity (8), aspect (9), and scope of negation (10).

(8) a. Matti osti olutta
M. bought beer|PART
'Matti bought (some) beer.'

b. Matti osti oluen
M. bought beer|ACC
'Matti bought a beer.'

(9) a. Kun tulin kotiin, Matti pesi autoa
when came-I home M. washed car|PART
'When I came home, Matti was washing a/the car.'

b. Matti pesi auton
M. washed car|ACC
'Matti washed a/the car.'

(10) Matti ei pessyt autoa / *auton
M. not washed car|PART car|ACC
'Matti didn't wash a/the car.'

This paper is concerned with the condition of quantity, illustrated in (8a). In this use the partitive gives divisive nouns, i.e. plurals and mass nouns, a so-called 'indefinite quantity' meaning.[1] This meaning is possible only in some contexts. First, the conditions seem to have a hierarchical order so that quantity is the weakest one, and negation is the strongest one. Also, with some verbs the plural partitive may never indicate indefinite quantity. These are verbs that take their object only in the partitive form.

2. Plural partitives

2.1 Indefiniteness of partitives

What does it mean that plural partitives are quantitatively indefinite? Clearly, this meaning is related to the existential use of English bare plurals. It is well-known that English bare plurals are used in both existential and generic sentences. The interpretation of the noun phrase as existential or universal depends on the context. A typical existential context in English is *there is/are*-sentences as in (11a), and an example of a generic context is the predicate *be intelligent* as in (11b).

(11) a. There are dogs downstairs
b. Dogs are intelligent

In the corresponding Finnish sentences in (12), the existential 'dogs' is in the partitive, and the generic 'dogs' in the nominative.

(12) a. Alakerrassa on koiria
downstairs is dogs|pl.PART
'There are dogs downstairs.'
b. Koirat ovat älykkäitä
dogs|NOM are intelligent|pl.PART
'Dogs are intelligent.'

In formal semantics the two uses of English bare plurals have raised the question whether or not bare plurals in English are ambiguous. Carlson (1978) argued for a unified treatment of bare plurals. In his theory, bare plurals always denote kinds. They do not themselves bring any quantifier to the sentence. The ontology for the sorts of entities that noun phrases may have as their denotations has three layers: stages, objects, and kinds. The stages can be understood as realizing objects and kinds in time and space. Objects are normal individuals. The existential quantifier that is present in some sentences with bare plurals is introduced when they combine with predicates that apply to stages.

Finnish does not have bare plurals in the same way as English does. Neither does the use of cases correspond to the use of the

articles in English. In the subject position, the plural partitive is always existential. This is exemplified in (13).

(13) a. Pöydällä oli kirjoja
table-on was books|pl.PART
'There were (some) books on the table.'
b. Koiria haukkuu
dogs|PAR bark
'Some dogs are barking.'

These partitive subjects contrast with the plural nominative subjects in (14). Depending on the context, the plural nominative is specific or universal.

(14) a. Kirjat ovat pöydällä
books|NOM are table-on
'The books are on the table.'
b. Kirjat ovat hyödyllisiä
books|NOM are useful
'Books are useful.'
c. Koirat haukkuvat
dogs|NOM bark
'Dogs bark.' / 'The dogs bark.'

(15) exemplifies the contrast between the partitive and the accusative in the object position.

(15) a. Matti tuntee lingvistejä
M. knows linguists|pl.PART
'Matti knows (some) linguists.'
b. Matti tuntee lingvistit
M. knows linguists|ACC
'Matti knows the linguists.'

With some transitive verbs the accusative is not possible. These are verbs that seem to lexically select the partitive case for their object. Many of these verbs express emotions or attitudes, as for example 'love', 'hate', 'respect', or 'admire'. The partitive objects of these verbs may never have an existential reading. The natural interpretation of the plural partitive object in (16) is universal. The accusative is ungrammatical.

(16) Fred ihailee lingvistejä / *lingvistit
F. admires linguists|pl.PART linguists|ACC
'Fred admires linguists (in general).'

With all accusative verbs plural partitive objects indicate indefinite quantity.

A detailed discussion of the semantic classes of Finnish partitive verbs of this type is outside the scope of this paper. One factor might

be the non-extensional nature of the verbs. Non-extensional verbs such as 'love', 'fear', 'hate', 'admire', 'respect' do not entail the existence of their object. In other words, one can love or fear something that does not exist. A natural class of accusative verbs would then be extensional verbs. These entail the existence of their object. Carlson (1978:112) suggests that extensional verbs such as 'know' and 'find' are 'natural with existential *a* and *some* quantifying over the object NP, and the existential use of the bare plural is selected'.

2.2 Cumulative reference of partitives

Why can a plural partitive be followed by a quantifier in Finnish? I propose that the partitive case in Finnish marks plural and mass noun phrases as cumulative. The cumulative reference property was first introduced in Quine 1960. It can be illustrated with the mass noun *water* as follows:

> If *This is water* is true about a quantity A of some liquid and if it is also true about another quantity B of some liquid, it is also true about the sum of these quantities A+B.

In English, cumulative reference characterizes mass nouns (*water*, *gold*, *money*) and bare plurals (*apples*, *stars*, *lines*). The idea is that the denotation of both mass nouns and bare plurals is not restricted in terms of quantity. Krifka (1989) distinguishes cumulative and quantized nominal predicates, as exemplified in (17).

(17)	CUMULATIVE	QUANTIZED
	beer	a glass of beer
	books	a book
		five books

Krifka (1989:76) expains cumulativity with the mass noun *beer* as follows: 'If there are two entities to which *beer* applies, this predicate applies to their collection as well.'

In Finnish, the nominative or the accusative is naturally interpreted as referring to some individual object or a specific set or quantity, and a partitive as referring cumulatively to arbitrary quantities.[2]

(18) a.	omena	omenat
	apple|NOM	apples|pl.NOM
	'an/the apple'	'the apples'
b.	omenaa	omenoita
	apple|PART	apples|pl.PART
	'apple'	'(some) apples'

As in Finnish cumulative reference is marked by case morphology, it does not have to coincide with the indefiniteness connected with familiarity. Even partitive noun phrases with definite determiners refer cumulatively, as for example (19b).

(19) a. se omena ne omenat
that|NOM apple|NOM those|NOM apples|NOM
'that apple' 'those apples'

b. sitä omenaa niitä omenoita
that|PART apple|PART those|PART apples|PART
'some of that apple' 'some of those apples'

Languages have mechanisms for restricting the quantity of a cumulative noun phrase. In particular, measure phrases are such means. For example, in English a measure phrase such as *one kilo of* may apply to a cumulative mass noun such as *butter*. In Krifka's terms, measure phrases apply to cumulative predicates to derive quantized predicates. In Finnish, measure phrases and mass quantifiers combine with partitives. Some quantized noun phrases derived in this way are given in (20).

(20) a. kaksi kiloa kultaa / omenoita
two kilo|PAR gold|PAR apples|PAR
'two kilos of gold / apples'

b. joukko älykkäitä poikia
group intelligent|PAR boys|PAR
'a group of intelligent boys'

c. paljon kultaa / omenoita[3]
a lot gold|PAR apples|pl.PAR
'a lot of gold' / 'a lot of apples'

A measure phrase that expresses the number of individuals has the measuring unit *kappale* 'piece'.

(21) kaksi kappaletta poikia
two|NOM piece|sg.PART boys|pl.PART
'Two (pieces of) boys'

Measure phrases may not have universal or definite quantifiers.

(22) *kaikki / *molemmat kappaleet
all|NOM both|pl.NOM pieces|pl.NOM

2.3 Quantifier floating with partitives

In Finnish, the measure phrases may appear outside of the partitive noun phrases which they modify. This is the case in (23b) and (24b), as the plural partitive has moved to the beginning of the sentence, and the measure phrase is in the sentence-final position.

(23) a. Pöydällä oli kaksi kappaletta kirjoja
table-on was two piece|sg.PART books|pl.PART
'There were two books on the table.'
b. Kirjoja oli pöydällä kaksi kappaletta
books|pl.PART was table-on two piece|sg.PART
'There were two books on the table.'
('Speaking of books, there were two of them on the table.')

(24) a. Matti tuntee kaksi kappaletta lingvistejä
M. knows two|ACC piece|sg.PART linguists|pl.PART
'Matti knows two linguists.'
b. Lingvistejä Matti tuntee kaksi kappaletta
linguists|pl.PART M. knows two|ACC piece|sg.PART
'Speaking of linguists, Matti knows two of them.'

The measure may be associated only with existential partitives. Thus it is not possible with partitive verbs such as 'admire' in (25).

(25) a. *Matti ihailee kahta kappaletta linvistejä
M. admires two|PART piece|sg.PART linguists|pl.PART
b. *Lingvistejä Matti ihailee kahta kappaletta
Linguists|pl.PART M. admires two|PART piece|sg.PART

We may conclude that in Finnish quantizing by a measure phrase has the same affect as the accusative.

Another generalization seems to be that the measure phrases themselves are either in the nominative or in the accusative. However, vague quantifiers such as 'several', 'few, and 'many' occur always in the plural partititive. It has been claimed that the indefinite meaning of these quantifiers is incompatible with the definiteness of the Finnish accusative (e.g. Hakulinen & Karlsson 1979:150).[4]

(26) (a) *Ostin kirjoja usean kappaleen
bought-I books|pl.PART several|sg.ACC piece|sg.ACC
(b) Ostin kirjoja useita kappaleita
bought-I books|pl.PART several|pl.PART pieces|pl.PART
'I bought several books.'

We may conclude that the partitive form really does not take care of quantification, but that it rather has to do with indefiniteness.

When the measuring unit is *kappale* 'piece', it is usually omitted from a floated measure. Ki-Sun Hong (1990) notes that in Korean the initial noun phrases that are later modified by a floated quantifier have a discourse function that Dik (1978) defines as 'specifying the domain or the universe of discourse with respect to which the predication following it is going to present some relevant

information'. The same can be said about the Finnish plural partitives with floated measures. In (27a) the quantity is actually the only information that the sentence gives. In this case (27b) is impossible.

(27) a. Meitä on paljon
us|PAR is a lot
'There are a lot of us.'
b. *On paljon meitä
is a lot us|pl.PART

The discourse function of specifying domains is also used when the information concerning different domains is contrasted, as in (28).

(28) a. Lingvistejä oli paikalla kuusi, mutta matemaatikkoja neljä
linguists was present six but mathematicians four
pl.PAR NOM pl.PAR NOM
'There were six linguists but four mathematicians present.'
b. Mark tuntee lingvistejä kuusi, ja matemaatikkoja neljä
M. knows linguists six and mathematicians four
pl.PAR ACC pl.PAR ACC
'Mark knows six linguists and four mathematicians.'

I propose that in Finnish the quantified partitives are interpreted in the following way:

(i) the existence of some specimens of a kind is asserted;
(ii) the quantity of the cumulative reference is restricted.

3. Plural elatives

The Finnish elative construction is exemplified in (29).

(29) a. kaksi kirjoista
two|NOM books-out-of|pl.ELAT
'two of the books'
b. muutama noista kirjoista
a few|NOM those-out-of|pl.ELAT books-out-of|pl.ELAT
'a few of those books'
c. jokainen kolmesta kirjasta
each|NOM three-out-of|sg.ELAT book-out-of|sg.ELAT
'each of the three books'

In all these examples the elative complement is understood as referring to some specific set. The elative in Finnish thus seems to satisfy the so-called partitive constraint defined for the partitive constructions in English. Formal definitions of this constraint appear in Jackendoff 1977, Barwise & Cooper 1981, and Keenan & Stavi 1986. As this constraint was formulated for English, it is stated in terms of definite determiners. As we have seen, the definiteness of

Finnish noun phrases does not depend on determiners in the same way as in English.

Elative constructions, too, split quite easily, as shown in (30).

(30) a. Matti osti kaksi kirjoista
J. bought twolsg.ACC books-out-oflpl.ELAT
'Matti bought two of the books.'
b. Matti osti kirjoista kaksi
M. bought books-out-of two
pl.ELAT sg.ACC
c. Kirjoista Matti osti kaksi
books-out-of M. bought two

Similarly to the initial partitive, the initial elative may indicate the discourse function of introducing the relevant domain. Thus (c) says 'Speaking of the books, Matti bought two of them'.

The quantity expression is the head of the elative construction. It determines the syntactic behavior of the whole NP. (31a) is an example of the possessive construction, in which the subject is in the adessive case, meaning 'on-X'.

(31) (a) Kahde-lla oppilaista on kirja
two-onlADESS students-out-oflpl.ELAT is booklNOM
'Two of the students have a/the book.'
(b) Oppilaista kahde-lla on kirja
students-out-of two-on is booklNOM
(c) Oppilaista on kirja vain kahde-lla
students-out-o is book only two-on

As the examples in (31) show, the elative construction can be the locative subject of these sentences. The adessive case is only marked on the quantifier *kaksi* 'two'.

In the previous section I noted that the vague quantifiers 'several', 'few', or 'many' could not be in the accusative. They occurred in the plural partitive. The elative construction seems to offer an exception to this restriction. As far as I know, hardly any attention has been given to the fact that vague quantifiers may occur in the accusative in elative constructions. This possibility is illustrated in (32).

(32) Ostin usean kirjoista
bought-I severallsg.ACC books-out-oflpl.ELAT
'I bought several of the books.'

This evidence suggests that although the accusative case cannot freely mark vague determiners, this restriction does not follow from the lexical meaning of these quantifiers, as suggested by Hakulinen and Karlsson (1979).

Typically the interpretation of a vague quantifier depends on the situation. If it applies to a specific set, the interpretation is relative to the cardinality of the set. For example 'several' might be interpreted as 'at least half of the cardinality'. If the cardinality of the set under consideration is not known, in principle there is no limit to how many 'several' might be. To distinguish these two situations, Milsark (1974) talks about the quantificational and the cardinal reading of vague quantifiers. According to him, in an existential sentence one gets only the cardinal reading.

The quantificational use of vague quantifiers may have something to do with the possibility of getting the accusative in elative constructions. In the elative construction the elative complement denotes some specific set. Thus, when a vague quantifier precedes it, the interpretation is quantificational. If on the other hand the NP is a plural partitive, the set is not restricted, and the interpretation of a vague quantifier is cardinal.

4. Partitive and elative pronouns contrasted

In Finnish a plural partitive pronoun may be existential.

(33) Matti pudotti lehdet
M. dropped magazines|pl.ACC

Niitä oli yhteensä kymmenen
they|pl.PART was altogether ten|NOM

Nyt niitä on kaikkialla
now they|PAR is everywhere

'Matti dropped the magazines. There were altogether ten of them. Now there are they (= magazines) everywhere.'

In this context the plural partitive is restricted to the set of magazines in question.

The verb class is relevant in the interpretation of the partitive pronoun. With 'know' the partitive pronoun denotes any subset of linguists in general, as opposed to the accusative pronoun, that denotes the specific group of ten linguists introduces.

(34) Fred tuntee kymmenen lingvistiä,
F. knows ten|ACC linguist|sg.PAR
'Fred knows ten linguists.'

a. ja John tuntee heitä myös
and J. knows them|PART too
'and John knows (some of) them (= some linguists) too.'

b. ja John tuntee heidät myös
and J. knows them|ACC too
'and John knows them too.'

With 'admire', on the other hand, the partitive pronoun can only denote the specific group of ten linguists.

(35) Fred ihailee kymmentä lingvistiä
F. admires ten|PAR linguist
'Fred admires ten linguists,'
a. ja John ihailee heitä myös
and J. admires them|PART too
'and John admires them (= those ten linguists) too.'
b. *ja John ihailee heidät myös
and J. admires them|ACC too

Finnish differs from English in the possible interpretation of the pronoun. English allows two interpretations of *them* in all the sentences in (36). It can have as its antecedent either the whole NP *ten linguists* or just the bare plural *linguists*.

(36) a. Fred knows ten linguists, and John knows six of them
b. Fred admires ten linguists, and John admires six of them
c. Fred is looking for three articles, and John is looking for two of them

Contrast these sentences with their Finnish counterparts in (37). With 'admire' (37b) and 'look for' (37c), the partitive of 'them' may not refer to linguists in general. This is only possible with 'know' as in (37a).

(37) a. Fred tuntee kymmenen lingvistiä,
F. knows ten|ACC linguist
'Fred knows ten linguists,'
i. ja John tuntee heistä kuusi
and J. knows them-out-of|pl.ELAT six|ACC
'and John knows six of them (= the ten linguists).'
ii. ja John tuntee heitä kuusi
them|pl.PAR six|ACC
'and John knows six of them (= linguists).'

b. Fred ihailee kymmentä lingvistiä,
F. admires ten|PAR linguist|PAR
'Fred admires ten linguists,'
i. ja John ihailee heistä kuutta
and J. admires them-out-of|pl.ELAT six|PAR
'and John admires six of them (= the ten linguists).'
ii. *ja John ihailee heitä kuutta
and J. admires them|pl.PAR six|PAR

c. Fred etsii kolmea artikkelia,
F. looks for three|PAR article|PAR
'Fred looks for three articles,'
i. ja John etsii niistä kahta
and J. looks for them-out-of|pl.ELAT two|PAR
'and John looks for two of them (= the three articles.'
ii. *ja John etsii niitä kahta
and J. looks for them|pl.PAR two|PAR

The readings in which *them* in (36b) and (36c) refers to linguists and articles in general can in Finnish be expressed by an elliptic expression with just the numeral, or by repeating the noun after the numeral, as in (38).

(38) a. Fred ihailee kymmentä lingvistiä,
F. admires ten|PAR linguist|PAR
ja John kuutta (lingvistiä)
and J. six|PAR (linguist|PAR)
'Fred admires ten linguists, and John, six (linguists).'
b. Fred etsii kolmea artikkelia,
F. looks for three|PAR article|PAR
ja John kahta (artikkelia)
and J. two|PAR (article|PAR)
'Fred looks for three articles, and John, for two (articles).'

The possible interpretation of the plural partitive also depends on the noun phrase that the pronoun refers back to. If this noun phrase defines a specific set, as for example the accusative 'the Finnish linguists' in (39) does, both the partitive and the elative pronoun denote subsets of this set.

(39) Fred tuntee Suomen lingvistit
F. knows Finland's linguists|pl.ACC
ja John tuntee
and J. knows
a. heitä joitain
them|PART some|pl.PART
b. heistä joitain
them-out-of|pl.ELAT some|pl.PART
'Fred knows the Finnish linguists, and John knows some of them.'

Further, with some semantically plural antecedents the partitive pronoun is not possible at all. This is the case with conjunctions that give the set by listing its members, as in (40).

(40) Markku tuntee Laurin, Kimmon, Marian ja
M. knows L.|ACC K.|ACC M.|ACC and
Fredin, ja Timo tuntee
F.|ACC and T.|NOM knows
a. *heitä joitain
them|PART some|pl.PART
b. heistä joitain
them-out-of|pl.ELAT some|pl.ELAT
'Mark knows Lauri, Kimmo, Maria, and Fred, and Tim knows some of them.'

5. Conclusion

In this paper I have shown that in Finnish, quantified plural partitives differ from quantified plural elatives in several respects. The main semantic difference is that the partitive occurring with a quantifier is indefinite, whereas the elative occurring with a quantifier is definite. I have argued that this difference is the reason that partitive pronouns may introduce kinds, whereas the denotation of elatives is always restricted to a specific set.

Another difference between quantified partitives and quantified elatives is the semantic nature of the quantifier. I proposed that the quantifier occurring with the plural partitive is a measure phrase which applies to a cumulative nominal predicate. This operation is semantically important, because it derives quantized nominal predicates from cumulative nominal predicates. When discussing this I suggested that in Finnish grammar both the measure phrases and the accusative case serve the same purpose. This also explains why quantified partitives as objects occur only with accusative verbs. I also noted that the unacceptability of vague quantifiers in the accusative case with plural partitives, and their acceptability with plural elatives, correlates with the difference between the cardinal and the proportional interpretation of these quantifiers. The question is about the specificity of the set that the quantifier applies to.

NOTES

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[1] In Finnish linguistics the meaning of the partitive has been described by at least the following notions: indefinite quantity, partial quantity, neutral quantity, quantity admitting surplus, and non-exhaustive or open reference.

[2] Yli-Vakkuri (1979) seems to have a somewhat similar idea on the role of the partitive case in quantification. She thinks that in Finnish the partitive expresses 'neutral' quantity.

[3] The distribution of the noun phrases with the mass quantifer *paljon* 'a lot '/'much' is a puzzle in Finnish grammar. It parallels the distribution of accusative objects on one hand, and the distribution of partitive subjects on the other. Karttunen (1970) suggests that all these sentences are in some sense resultative. It is known that in Finnish the accusative object indicates a resultative aspect. Karttunen claims that sentences with partitive subjects are also resultative. They express change from one state to another. Hakulinen and Karlsson (1979:149) argue against this analysis by pointing out that sentences with *asua* 'live', *istua* 'sit', or *olla* 'be' are not resultative, although the subject may be a plural partitive or a *paljon*-phrase.

[4] A special behavior of weak quantifiers with respect to case marking has been noted for example by Enç (1991). In Turkish, the accusative case morphology is optional for weak determiners like 'one, two, seven, thirty...', 'several', 'a few', 'many', 'few'. With the accusative case morphology the NP's are specific, but without it, they are nonspecific.

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LANGUAGE IDENTITY, CONFLICT, AND CONVERGENCE IN SOUTH ASIA

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This paper has one specific aim: to show how different 'acts of identity' (Le Page & Tabouret-Keller 1985) are negotiated and manifested in multilingual settings and what their consequences are. Based on the assumption that identity is a socially constructed phenomenon, it is argued here that the concept of identity in multilingual South Asia is not immutable, rather it is variable and derives its interpretation from the context of situation. By synthesizing existing conceptualizations and empirical evidence in linguistics, sociolinguistics, anthropological linguistics, and related disciplines into a single theoretical scheme (Gumperz 1982a & b), this paper explores the repertoire of identities available to members of multilingual speech communities and shows how these identities sometimes compete with each other, leading invariably to language conflict, language convergence, and language variation.

1. Introduction

Much of the research on the study of language and identity rightly places emphasis on language as central to the process of the social construction of identity (Gumperz 1982a,b; Le Page & Tabouret-Keller 1985, Edwards 1985, Gudykunst 1988). This paper takes a closer look at the concept of identity in the context of a sociolinguistic area and proposes a (re)definition of identity, one which is not immutable but 'variable' and derives its interpretation from the 'context of situation'. Language use, as both indexical and symbolic of identity, and as an important behavioral resource, provides the theoretical framework for the interpretation of the identity constructed in a given sociolinguistic interaction. This approach to language study in a broader theoretical framework is found in Fishman 1965, 1966, 1972, Gumperz 1964, Halliday 1970, 1973, Hymes 1964, 1972, and Labov 1966, 1972. It is not claimed, however, that identity is predictable from language use, but rather that language use embodies and symbolizes identity or efforts to change an identity.

My main argument, following mainly from the work of Le Page & Tabouret-Keller (1985) and Le Page (1986), is that individuals 'create their linguistic systems so as to resemble those of the groups with which from time to time they wish to identify' (Le Page 1986:23). This argument, as it relates to my study, is premised on two assumptions: (a) Identity is a socially constructed phenomenon which arises out of sociolinguistic interactions; and (b) identity is established and maintained through language. This paper focuses on South Asia (mainly India) which provides a fascinating sociolinguistic laboratory for the study of the phenomenon of language-contact, especially as it relates to issues of language identity, language conflict, and language convergence. This paper is organized as follows: First, a definition of relevant concepts is provided to situate the theoretical/conceptual framework used in this study. Then the language situation in India is outlined followed by a discussion of the interaction of language identity, conflict, and convergence. The paper ends with a discussion of the implications and conclusions.

2. Conceptualization of the field

2.1 Language convergence and sociolinguistic area

Sprachbund, or 'linguistic area' as the term is commonly understood, refers to a group of geographically contiguous languages that do not exhibit any discernible genetic relationship but in response to centuries of long-standing bilingual contact, have made structural adjustments to the extent that they come to resemble each other.[1] Large-scale diffusion of linguistic features across genetic boundaries has resulted in the following sets of reciprocal phenomena: The Indo-Aryanization of Dravidian languages (Sridhar 1975) and the Dravidianization of Indo-Aryan languages (Gumperz & Wilson 1971, Nadkarni 1975, Pandit 1972); the Indianization of the English language (B. Kachru 1983) and the Englishization of Indian languages (B. Kachru 1986); the linguistic 'alliance' between Tibeto-Burman Newari and Indo-Aryan Nepali (Bendix 1974) and the linguistic 'separation' of Malayalam from Old Tamil (as a result of excessive Sanskritization of Malayalam (Sridhar 1975)).

While such studies have indeed been insightful for the understanding of the phenomenon of multilingualism, language contact, and language change, there is a more interesting aspect, namely LANGUAGE USE, that has been completely ignored until recently, except for Pandit 1972. D'souza (1986, 1987) investigates some features of language use that, together with features of language structure, characterize India as a sociolinguistic area. She defines a sociolinguistic area (1987:29-30) as:

> one in which LANGUAGES BELONGING TO SEVERAL DIFFERENT FAMILIES converge as a result of their daily interaction and because they are called upon to express certain shared social and cultural experiences and adhere to sociocultural norms accepted by the members of the society at large. Such an area is marked by widespread bilingualism or multilingualism and by the fact that common social, cultural, and linguistic factors have influenced the languages of the area. (Emphasis added)

The concept of sociolinguistic area is insightful because it allows one to make significant generalizations about shared structural features in a linguistic area based on particular patterns of language use over time. It also raises important questions concerning 'the mechanisms by which linguistic convergence takes place and the social conditions which cause these linguistic changes to occur' (Shapiro & Schiffman 1975:154). In fact it is only through the concept of sociolinguistic area that linguistically significant generalizations about the CAUSES of linguistic convergence in other parts of the world, such as in the Balkan countries, can be made (see Lehiste 1988:61-75, Hock 1986:494-498).

2.2 Language, identity, and language use

Defining either 'language' or 'identity' is a notoriously difficult task: Any attempt toward a precise description of the relationship between the two has always been uneasy and tricky. This paper however, presupposes a reciprocal relationship between language and identity, i.e., language use influences the formation of identity, but identity also influences language use and attitude. This theoretical insight from interactional sociolinguistics (Gumperz 1982a,b) forms the basis for the understanding and interpretation of the role of language in the formation, maintenance, or rejection of identity.

At one level of description, identity may be defined in terms of 'language' as an idiolect, i.e. as an individual's idiosyncratic behavior; at another level of description however, identity may be defined in terms of a 'code hierarchy' (B. Kachru 1986) which is determined essentially by pragmatic considerations. The concept of identity is thus discussed as a multidimensional, hierarchical, and dynamic process. (For some case studies see Annamalai 1978, Bhatia 1987, Bokamba 1988, Gibbons 1987, Gudykunst 1988, Gumperz 1970, B. Kachru 1978.)

The notion of a hierarchy of identities is important in the multilingual, multicultural, and multiethnic context of India as a sociolinguistic area.[2] Which identity will come into play in a sociolinguistic interaction will depend on the 'context of situation'.

The 'context of situation' may include a nonlinguistic context of speech event: It may be defined either (a) as 'contextual domain' (McCawley 1979) where context is built by the discourse itself as it develops, or (b) as the options that any sociolinguistic system makes available to its interlocutors.[3]

2.3 Language conflict

At times political decisions produce important changes in the linguistic ecology of a contact situation. (Some examples include the creation of Hindi-speaking Haryana from Punjab, Telugu-speaking Andhra Pradesh from Madras, etc.) For a sociolinguistic area this has important implications, especially in connection with a new (i.e. changed) attitude toward, and evaluation of, 'diatypic' linguistic variation.

In a sociolinguistic area, language issues are very sensitive and, therefore language planning must, on the one hand, ensure the preservation of religious, cultural, and linguistic identity, and, on the other hand, respect the relationship between linguistic convergence and language dynamics.

Elsewhere (Bhatt 1990) I have argued that language conflict, manifested as linguistic mobilization among minority groups, generally reflects the dynamics of language status and the changing sociocultural context of language identity and language use. It has been argued that whenever social mobility is blocked for a linguistic minority, it produces relative deprivation (Rao 1979, Beer 1985). According to this framework, language conflict arises when certain minority groups break out of a traditionally subservient position and improve their situation relative to others (Beer 1985:217). These minority groups form a self-conscious identity based on their distinct sociolinguistic and cultural characteristics and they use that as an effective basis for linguistic mobilization.[4]

Examples include the violent situation in Jaffna (Sri Lanka), where Tamil and Sinhalese speakers are engaged in a seemingly unending ethnolinguistically based war which has resulted in the loss of thousands of lives so far; the creation of Pakistan out of British India in 1947 on primarily religious grounds; the creation of Bangladesh out of Pakistan in 1971 on a mainly linguistic basis; and the political restructuring of Indian society after the creation of Hindi-speaking Haryana from Punjab and Telugu-speaking Andhra Pradesh from Madras.

3. Case study of a sociolinguistic area

3.1 Language profile of India

There are 1652 mother tongues spoken in India which belong to the following four language families:[5] Indo-Aryan (74.24%), Dravidian (23.86%), Austro-Asiatic (1.16%), and Tibeto-Burman (0.62%). Tables 1-4 gives an idea of the linguistic diversity in India, which led Ferguson (1966) to regard India as a 'sociolinguistic giant'.

There are fifteen national languages (i.e. languages specified in the VIIIth Schedule of the Indian Constitution) which cover 95.58% of the total household population of India. Each of the 15 national languages (excluding Sanskrit) has between 10-97 dialects (Shrivastava 1979). The number of mother tongues in a state varies between 12 (Orissa) and 187 (Maharashtra). Out of the 1652 mother tongues, 240 have more than 10,000 speakers whereas 1248 do not have more than 1,000 speakers. There are 400 "tribal languages", most of which have no written tradition. Hindi (in the Devanagari script) and English are the two official link-languages of India. Together, these two languages make up more than half of the bilingual population. The diglossic variation in some of the language situations adds another variable to the dynamics of language interaction in India as a sociolinguistic area, e.g. Bengali [sadhu bhaSa (H) vs. colit bhaSa (L)], Telugu [granthika (H) vs. vyavaharika (L)], Tamil [Classical (H) vs. Colloquial (L)], Kashmiri [Sanskritized/Persianized (H) vs. Colloquial (L)] and Hindi [(Official/New (H) vs. Colloquial (L)].

Language	% of Total Population	
	1971	1981
Assamese	1.63	Not available
Bengali	8.17	7.79
Gujarati	4.72	5.02
Hindi	29.67	39.34
Kannada	3.96	4.06
Kashmiri	0.44	0.48
Malayalam	4.00	3.92
Marathi	7.71	7.50
Oriya	3.62	3.46
Punjabi	3.00	2.81
Sanskrit	N/A	N/A
Sindhi	0.31	0.29
Tamil	6.88	6.76
Telugu	8.17	8.20
Urdu	5.22	5.34

Table 1. Linguistic mosaic of India

State	Percentage of minority language speakers
Andhra Pradesh	14.87
Assam	Not available (42.86% according to 1971 census)
Bihar	19.83
Gujarat	9.27
Himachal Pradesh	61.53
Jammu & Kashmir	47.27
Karnataka	34.31
Kerala	4.01
Madhya Pradesh	15.63
Maharashtra	23.86
Manipur	35.54
Nagaland	84.54
Punjab	15.52
Rajasthan	10.11
Sikkim	54.15
TamilNadu	14.65
Tripura	34.78
Uttar Pradesh	10.32
West Bengal	13.63

Table 2. Percentage of minority-language speakers in most of the Indian states (1981)

Percentage of minority speakers	Number of States & Union Territories
above 80%	1
above 70%	2
above 60%	1
above 50%	1
above 40%	5
above 30%	3
above 20%	4
below 10%	2

Table 3. Percentage of minority language speakers by States and Union Territories

Andaman & Nicobar Islands	78.20
Dadra & Nagar Haveli	41.14
Delhi	22.62
Goa, Daman, Diu	11.19
Lakshadweep	16.92
NEFA[6]	72.59
Pondicherry	11.71

Table 4. Percentage of minority language speakers in some Union Territories:

In addition, the reorganization of states along linguistic lines has resulted in the creation of a typologically different set of states: On the one hand we have states like Gujarat and Karnataka, where Gujarati or Kannada, respectively, is both the official and the majority language, while on the other hand we have states like Jammu and Kashmir, where Kashmiri is the mother tongue of a majority of speakers but Urdu is the official language; Himachal Pradesh, where Hindi, the official language, is the mother tongue of a negligible minority; and Nagaland, where English, the official language, is perhaps nobody's mother tongue (Mahapatra 1979). The reorganization process has in fact changed a non-competing and non-conflicting type of societal bilingualism to a competing and conflicting one.

As a result of linguistic reorganization, the minority groups are now in a peculiar position. In some states (see Table 2) and Union Territories (see Table 4), the number of minority language speakers is larger than the number of the majority language speakers. For example, in Bihar, out of the 48 mother tongues reported in the 1971 census, the percentage of minority language speakers was 55.70. In Jammu & Kashmir and in Assam, a significant number of minority language speakers (45.58% and 42.86%, respectively) live in close contact with the majority language speakers. Nagaland has more than 80% of minority language speakers while NEFA and Andaman & Nicobar islands have more than 70% of minority language speakers.

3.2 Language identity and conflict

Theoretical speculations and empirical research on the relationship between language and identity have shown that language is not only crucial for the formation, presentation, and maintenance of identity (Edwards 1985), it is also essential as a marker of group identity just like age, sex, social class/caste, religion, etc. To quote Thumboo (1991:206):

> Our involvement with language is marked by unceasing conscious and unconscious acquisitions and modifications. We test, alter, subvert, elevate, permutate, and create;

> explore the 'meaning potential' of words, in isolation, as parts of a phrase, clause, sentence; as images and symbols, manipulated and manipulating. We develop an idiolect.

It is this "idiolect" (= dialect) that is chosen to be a salient characteristic of the national identity of countries like Israel, the USA, Great Britain, France, and Italy; or the ethnic identity of Chicanos and Blacks in America; Malay, Chinese, and Indians in Singapore; or Macedonians in Yugoslavia; or the social identity of Afrikaners in South African society.

In the remainder of this section, I will discuss the repertoire of identities available to members of a speech community in a sociolinguistic area, and how these identities sometimes compete with each other, leading invariably to language variation,[7] language conflict, and language shift.

The role of language in nation building and national identity has been discussed extensively in the literature. To many scholars, like Noah Webster for example, language IS identity. Webster's magnum opus, An American Dictionary of the English Language, in 1828 was instrumental in promoting an American national identity through language.[8] The elimination of the vestigial *u* in words like *colour*, or the replacement of *ize* for *ise* in words like *agonize* were deliberate innovations to Americanize the spellings and, in the process, create a new identity for a newly united American population (Weinstein 1982).

Other attempts toward creating a separate national identity have been made, specifically in those nations that were colonized by foreign powers. The cases of Indonesia, Malaysia, and Singapore are most illuminating. Indonesia, after she got her independence from the Dutch in 1945, opted for Bahasa Indonesia ('the Indonesian language'), a variety of Malay, as a sign of the Indonesians' identity (see Diah 1982, for details). Malaysia, after her independence from Britain in 1963, opted for a variety of Malay and named it Bahasa Malaysia ('the language of Malaysia') to express its national identity as distinct from Indonesia. Singapore chose Malay as the national language. Linguistic differences among the varieties of Malay used in these countries are perhaps slightly greater than the differences between the British and American varieties of English (Stevens 1973), but the point is made: Each nation-state requires a language which is symbolic of its nationhood.

In a sociolinguistic area, we see this point made more clearly. In South Asia, it has been often noticed that as long as a language remains a valued symbolic feature of nationalism, its power and the appeal of linguistic nationalism will remain intact, but as soon as another language provides a new political identity, the old language

is no longer desired and often rejected; it loses its function of linguistic nationalism. The creation of Bangladesh out of Pakistan is a good illustration of the interaction of language dynamics and national identity. Urdu, which served the function of affirming ethnicity and nationalism was given up in favor of Bengali after the Bangla language movement. This movement, in response to Urdu hegemony, led to the formulation and later assertion of political identity in terms of a well-articulated language ideology that called for an end to the multilingual diglossia in East Pakistan, now known as Bangladesh (see DasGupta 1985 and especially Kabir 1985).

The difference between Hindi and Urdu, two socio-cultural styles of the same speech, *khaRiibolii*, hinges on the writing systems and the source for lexical borrowing in their respective literary traditions: Sanskrit for Hindi and Persian for Urdu. It was *khaRiibolii* speech, known popularly as the Hindustani language, that became the symbol of linguistic nationalism during the independence movement in India. The use of Hindustani[9] during that period is perhaps most notable in the famous verse of Iqbal, *hindii hai˜ ham, vatan hai hindustaan hamaaraa* 'we are Hindi, and our country is Hindustan'. The word *vatan*, clearly a borrowing from Persian, is used for 'country', even in an emotionally charged verse, such as it is, calling for the peoples of India to get united under a common identity: Hindustani became the language of national emancipation and national unity. Once British India was divided into India and Pakistan, each country chose a different style/variety of Hindustani; India chose Sanskritized Hindi written in Devanagari script for purposes of national identity, while Pakistan chose Urdu in Perso-Arabic script for the same purpose.

The fate of Hindustani in India after the partition is no secret: Between 1951 and 1961, mother tongue returns for Hindustani declined by about 99% (Khubchandani 1972). This apparent decline in the reported use of Hindustani can be best understood in terms of what may be called the DESIRED linguistic identity. The semantics of desired linguistic identity is closely tied with questions like 'Who am I?', or more precisely 'How would I actually want to be perceived?' Individuals, it is assumed, project their identities through language and shape them according to the behavioral patterns of the groups with which they wish to identify (cf. LePage & Tabouret-Keller 1985).

The 'Black talk' by London Jamaicans (Le Page & Tabouret-Keller 1985) or the 'Fancy talk' by Black teenagers in the US (see Dillard 1972), which is characterized by flashy vocabulary, poetic diction, and abundant use of malapropisms (e.g. the use of 'revorce' for 'divorce'), are attempts to identify with the indigenous African culture. The use of such argot can be taken as an overt linguistic

reflex of psychological membership; in both of these cases (London Jamaicans and US Black teenagers) their image of themselves is a socially constructed and internalized conception. Duncan (1962:112) observes: '[each member of a group] hears his own words and then learns what words mean because he can observe how they can affect others and how they affect him'. These observations are the basis for shared meanings specific to a particular group, since such socialized language use forms a group dialect when taken together as a set of idiosyncratic language patterns (Fishman 1972).

In a sociolinguistic area, however, we often find that the association of language and desired identity is a variable. The partition of British India was interpreted by the Indian masses as a verdict against a 'composite' Hindustani (= Hindi-Urdu) identity,[10] which explains the APPARENT (self-reported) loss of 99% of Hindustani speakers between 1951 and 1961. A similar situation, reflecting the close relationship between language dynamics and desired linguistic identity, obtained in Pakistan after the emergence of Bangladesh. Pandit (1978) has reported that the Punjabi-speaking Muslims of Pakistan who had shifted to Urdu at the time of the partition of India, are now reviving the use of Punjabi, thus identifying themselves as a group distinct from the Pushto-speaking or Sindhi-speaking Muslims. He further notes that, 'The Punjabi Hindu of Delhi is prepared to give up Punjabi in order not to be identified with the Sikh... and the Punjabi Muslim of Pakistan is prepared to revive Punjabi in order NOT to be identified with other Muslims' (107).

The linguistic reorganization of India, which aimed at bringing together people speaking a common language, had two unwelcome consequences: (a) It maximized the social distance between majority and minority linguistic groups; and (b) it blocked social mobility for members of linguistic minorities. There is evidence that the strong relationship between linguistic identity and social mobility is at the base of all language conflict (Lehiste 1988, Mohan [Bhatt] 1989). Language conflict in India, manifested as shifts in language loyalties and identities, supports this claim.

Mukherjee (1980), in her study of language maintenance and language shift among Bengalis and Punjabis, two communities who have come under similar pressures to modify their social and linguistic behavior, reports that the Punjabi group shows linguistic convergence with language shift, while the Bengali group shows linguistic convergence with stable bilingualism (language maintenance).

Among the Tamilians in Bangalore, Bayer (1986) has shown that, for all of her three groups (Iyengars, Mudaliars, and Christians),

spoken Tamil is the principal language of the home, whereas outside of the home, they are shifting to Kannada in response to situational and functional needs. However, as Bayer (ibid:104) observes, the three groups stand united 'on the subject of maintenance of Tamil language as an important token in the maintenance of TAMIL IDENTITY and solidarity.' The language behavior of Kannadigas in Delhi (Satyanath 1982), and of Kashmiris in Kashmir (Mohan [Bhatt] 1983, 1989, Koul 1986) show the same correlation between language and desired identity.[11]

The discussion above points out the fact that the linguistic organization of states did not take into account the problem of another form of identity which derives from the migrant populations. While a strong argument can be made for a common language as a powerful unifier, the legislation of the use of such a language can be perceived as an attack upon an otherwise well-formed identity. The planned change from English to Hindi as national link-language after India got its independence, was a proposed change in social structure. Linguistic minorities saw in this change a threat to their own well-established identity and, as a consequence, an opportunity to assert their identities. The linguistic majorities on the other hand, saw a threat to their relative socio-political position.[12]

The consequences of language conflict were: the creation of Hindi-speaking Haryana from Punjab and Telugu-speaking Andhra Pradesh from Madras; the Maithali movement, with the dual purpose of standardization and modernization of Maithali and the development of a Maithali identity (Mishra 1979); the Konkani movement, the Santali movement, and the Assam movement. All of these instances of linguistic mobilization are responses to their threatened linguistic solidarity and identity (Bhatt 1990).

The 'glottopolitics' in the Hindi area (Y. Kachru & Bhatia 1978) describes very clearly the language rivalry and the emerging dialect conflict. Bihar, for example, in the absence of any mass exodus of Hindi speakers or an influx of a non-Hindi speaking population, recorded a net loss of 54.4% of Hindi speakers during the 1951-61 decade (Khubachandani 1981). The mystery over the APPARENT loss of Hindi speakers, as Khubchandani (1981:19) points out, is explained by the phenomenal increases in the returns of the Bihari group of languages (chiefly Bhojpuri, Maithali, and Maghai), from 112 thousands in 1951 to 16.4 millions in 1961. As Y. Kachru & Bhatia (1978:55) point out, 'the various dialects of Hindi area are struggling to preserve their identity'.

3.3 Linguistic neutralization of conflict

Centuries of language contact have resulted mainly in enriching and expanding the verbal repertoire of the Indian speech

community. The linguistic varieties that developed under conditions of language contact assumed important sociolinguistic functions, and, at the same time, contributed to the understanding of the phenomenon of linguistic convergence and the implications of its manifested existence in a Sprachbund. Two such examples that immediately come to mind are 'Urdu', a result of the interface of *KhaRiiBolii* with Persian, and 'Indian English', a result of contact between English and Indian languages.

In her definition of 'sociolinguistic area', D'souza insists on the 'convergence of languages belonging to different language families'. Such a definition, however, is very limiting (as she herself hesitatingly admits) since it not only excludes shared socio-cultural and linguistic features of the Malay Archipelago (Lowenberg 1984) where only languages of the Malay-Polynesian family are spoken, but it also excludes the sociolinguistic description and development of linguistic varieties that arise as a result of bilingual contact among languages belonging to the same family.

The development of Malwi, as a result of the convergence of the genetically related Gujarati and Rajasthani languages, has taken almost the same sociolinguistic route as the development of Saurashtri (Gujarati (Indo-Aryan and Tamil (Dravidian)) or perhaps the Kupwar dialects (Urdu (Indo-Aryan), Marathi (Indo-Aryan), Telugu (Dravidian) and Kannada (Dravidian)). The case of Halbi is another illuminating example of confluence of languages (Chattisgarhi, Oriya, and Marathi) belonging to the same family. The study of bazaar varieties of Hindi, e.g. Bambaiyaa Hindi or Kalkaṭiyaa Hindi or Naagpuri Maraaṭhi also helps to capture important generalizations about the sociolinguistic processes of languages in contact (e.g., convergence vs. pidginization).

The nature of linguistic alliance in a sociolinguistic area is such that it fosters stable multilingual identity. Pandit's (1972) example of a Gujarati spice merchant settled in Bombay illustrates this point well. The merchant speaks Gujarati with his family, Marathi in the market, Hindi with his milkman, and Kachhi and Konkani in the trading circles. It is not uncommon to find speakers of different languages living in close proximity without any threat to language loyalty or language maintenance. The study of Kupwar (Gumperz & Wilson 1971) is the most striking account of language maintenance in spite of centuries of stable multilingualism. Each of the four distinct linguistic groups — Urdu-speaking Muslim landholders, Kannada-speaking Jain landholders, Marathi-speaking Hindu laborers, and Telugu-speaking Hindu rope makers — maintained its language as a mark of its separate group identity.

After Indian independence in 1947, the modernization of most of the Indian languages began immediately through intensive borrowing from Sanskrit. One consequence of such rapid modernization was a virtual transformation of these languages into new, independent, literary languages, differing in their own particular ways from the corresponding spoken vernacular. The intensification of the diglossic situation in Hindi mainly due to the increased pace of Sanskritization (D'souza 1987, Y. Kachru 1987, DasGupta 1970) is a case in point, significant especially in terms of its sociolinguistic implications.

The division of language into literary (classical) and vernacular (colloquial) forms, at the grammatical as well as lexical levels is crucial in maintaining the traditional caste-related differences in Indian languages. The use of aspiration, the passive, or the clausal mode of relative clause formation in the H form of the Dravidian languages (Sridhar 1975) not only demonstrates the differences in education and social status but, more significantly, serves as the most important exponent of BRAHMIN IDENTITY. In Tamil, to give another example, the choice between lexical items, such as *maccaan* and *attimbeer* reveals CASTE IDENTITY (Annamalai 1978).

The language policy of classical revivalism, of the Sanskritization of the Hindi vernacular for its development, and the mandatory use of Hindi for all official purposes, had two important sociolinguistic consequences. First, the policy of Sanskritization resulted in a variety of Hindi which was far removed from everyday usage and became almost incomprehensible to the common people. Second, related to the first consequence, the standardization process intensified and later stabilized the diglossic split between literary/New (High) Hindi (e.g., *saarvajanik duurbhaaSak* 'public telephone') and colloquial (Low) Hindi (e.g., *pablik Telifoun* 'public telephone'); — the two forms are neither structurally nor functionally isomorphic. The New Hindi (NH), popularized in government documents, newspapers, and radio and television broadcasts, performs all the functions of a H-variety. At the same time, the population continues to some degree to speak the colloquial Hindi (CH) in informal domains and locales. Stabilizing diglossia, as a result of the Sanskritization of the H form and its use only in formal contexts, is one way of resolving language conflict.

In India, Sanskrit enjoyed the prestigious 'identification function' among the educated during and beyond its contact with Persian which in turn was the language of the court, administration, and education during the Moghul period. After English displaced Sanskrit for this important function, the Englishization of modern Indian languages (B. Kachru 1975) followed mainly as a result of widespread code-switching and mixing with English.

In a sociolinguistic area, code switching and mixing have important sociolinguistic implications for the relationship between language convergence and NEUTRALIZATION of linguistic identity. Neutralization is a linguistic strategy used to neutralize language conflict by the process of 'accommodation' (Giles & Johnson 1986): Sometimes the process of neutralization leads to the development of new identities. The process of partial reduplication is a result of code switching between Hindi and Persian which results in the neutralization of linguistic identities (see the examples below; italicized items are Persian borrowings).

(#)	tan-*badan*	'body'	naataa-*rishtaa*	'relationship'
	dhan-*daulat*	'wealth'	laaj-*sharam*	'deference'
	dharam-*imaan*	'religion	pyaar-*mohabbat*	'love'

Singh (1982:350) suggests that these forms may 'represent an effort to forge a hybrid language from the uncomfortable opposition between Hindi and Persian that made code-switching in India a necessity'. The process of convergence, due mainly to structural accomodation, eliminates language conflict and establishes a new identity.

'Nativization' of English in non-native contexts has led to the 'outer circle' varieties of English, which reflect local identities. Thus, notes Ogawa (1981), if the Japanese got rid of Japanese features in English, they would lose their identity. In Malaysia and Singapore, national identity is encouraged and reflected through the linguistic characteristics of the English variety used there (Lowenberg 1985). In Malaysia, Malaysians are proud of their own brand of English (Wong 1981), while in Singapore, the Singaporeans want to sound like Singaporeans, at least in the spoken variety of English. The borrowings of certain lexical items from Malay, Lowenberg (1985) argues, foregrounds national identity in these countries.

In a sociolinguistic area such as India, English serves the neutrality function: it is not bound to any particular socio-cultural or geographic group. The 1967 Official Language Amendment Act, which made English the 'Associate' official language, saved the country from the brink of dissolution.[13] English was the accepted compromise since it was not associated with any particular ethnolinguistic group, its identity being perceived as neutral. It has also been shown that code-mixing with English helps in the neutralization of social, regional, or caste identity (Annamalai 1978, Kachru 1986). Convergence, in terms of the nativization of English, helps to resolve language conflict in a sociolinguistic area, largely through strategies of neutralization.

4. Conclusions

The past few years have seen global conflict in terms of movements and uprisings which seem to have revolved around a common theme: IDENTITY. In these few years the United States has witnessed the rise of a powerful lobby that demands English must be established as the national language, while in the Soviet Union, the Baltic states have asserted their ethno-linguistic identity to claim autonomy from the Union. Similar expressions of identity and solidarity resulted, in part, in the destruction of communist ideology in East Germany and the political upheavals in other Eastern Block countries. The outcome was inevitable: the fall of the "Iron Curtain" and the union of the two Germanies.

This paper focused on South Asia to study the nature of the interaction of language contact and language identity; language identity and language conflict; and language conflict and language convergence. It was argued that (i) in multilingual societies individuals create their linguistic systems in order to resemble those groups with which from time to time they wish to IDENTIFY; and (ii) multilingual and multicultural societies generally allow different ethnic groups to explore the semantics of their hyphenated identities — whether it be the Tamil-Iyengars in Karnataka, India (see Bayer 1986), or Greek- and Italian-Americans in Pittsburgh, USA (see Bhatt 1987). These arguments were premised on the assumptions that (a) identity is a socially constructed phenomenon which arises out of sociolinguistic interactions, and (b) identity is established and maintained through language.

In sum, it is hoped that at a theoretical level at least, insights from limited studies such as this one can be useful for a sociolinguistic theory of 'interactional systematics' that will be able to relate abstract concepts of social structure (e.g., identity) to behaviorial facts (e.g., language use).

NOTES

[1] The works of Emeneau (1956, 1969), Masica (1976), Andronov (1964), and Kuiper (1967) are particularly significant for their contribution to the understanding of South Asia as a LINGUISTIC area.

[2] McNamara (1987) has discussed the importance of the notion of a hierarchy of identities in multiethnic settings.

[3] Language use also plays a crucial role in the process of identification. In this paper, I assume that identity management is a function of language choice and language use and attitude (see Giles & Johnson 1987, Ryan & Giles 1982, Le Page & Tabouret-Keller 1985, Bond 1983, Fishman et al. 1985, 1986, Kingsley & Kwok 1990). It is

through language use that individuals realize their identity (Gordon 1978) and see it mirrored in the responses of others.

[4] For a discussion of some case studies from India, see Annamalai 1979.

[5] The data are generally taken from the 1981 Census, unless otherwise mentioned.

[6] North East Frontier Agency

[7] A discussion on language variation between men and women is outside the scope of this paper. I do, however, regard gender identity as separate from the individual view of self; it is the shared, socially and culturally constrained identity of what it means to be a female or a male.

[8] A similar attitude is reflected in H. L. Mencken's choice for the title of his book, The American Language.

[9] Hindustani, spoken in the upper Gangetic Doab and in Eastern Punjab, appeared at this juncture as the only linguistic bridge between Persianised Urdu and Sanskritised Hindi.

[10] Compare Yugoslavia where we find Serbo-Croatian (Serbian-written in Cyrillic script, and Croatian-written in Roman) expressing a 'composite' identity of the nation.

[11] One is reminded of the Irish situation here. Between 1851 and 1901 the Irish speakers dropped from 1,524,286 to 641,142, yet in 1922 Irish was declared the national language of the Republic of Ireland (Hindley 1990). The people value the part Irish plays as an identifier of Ireland, but not enough to use the language in their daily lives.

[12] Joy (1972), McRae (1986), and Nelde (1987) discuss similar consequences of language contact and conflict in multilingual societies like Canada and Belgium.

[13] We still see traces of the Orientalist vs. Anglicist conflict which was resolved by Lord Macaulay's Minute, promulgated in 1835, making English the principal language of instruction (for more details see B. Kachru 1986).

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WHAT'S A NICE WORD LIKE YOU DOING IN A PLACE LIKE THIS? SYNTAX VS. PHONOLOGICAL FORM*

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A number of phenomena, including clitic pronoun and particle placement (CPP) in various Indo-European languages and even finite verb accentuation in Vedic Sanskrit, have been considered syntactic in one framework or another. Some of these phenomena, e.g. Vedic verb accentuation, can easily be shown to be matters of Phonological Form (PF). For clitics etc., the situation is less simple. Some languages (e.g. Modern Romance) no doubt require a syntactic approach. Doubts about the adequacy of such an approach have been expressed for Serbo-Croatian in Inkelas & Zec 1988, Zec & Inkelas 1990, and Radanović-Kocić 1988. I show that CPP is sensitive to aspects of phonological phrasing not only in Serbo-Croatian, but also in earlier Romance, Vedic Sanskrit, and Pashto. (For Pashto I draw heavily on earlier work by Tegey (1977), whose claims, however, were quite different.) CPP must therefore be taken care of in PF even though elements are 'moved' around within the clause. Details of how PF can account for CPP still need to be worked out, but an analogue can be found in Halle's morphological account (1990, Forthcoming) for the surface realignment of syntactic outputs like {have en + go} to *have gone*. I conclude with a consideration of phenomena for which a PF account is less certain, including the 'dummy *es*' of German impersonal passives etc., for which a PF analysis has been suggested by Hoeing 1991, without further elaboration. I show that for German, the PF account is fruitful by permitting a more plausible formulation of 'Topic deletion'.

0. Introduction

There is a common tendency among linguists, both traditional and modern-theory oriented, to assume that if certain linguistic processes or phenomena of broad application are sensitive to syntactic information then they must be taken care of in the syntax or in a closely related component (such as the Logical Form of the Principles & Parameters approach). In the Indo-European languages, numerous

phenomena of this type have been, and continue to be, claimed to be syntactic.

Some of these are considered syntactic only in more traditional approaches. This is true for Vedic Sanskrit finite verb accentuation, which appears to be sensitive to the syntactic distinction between main and dependent clauses, and for another 'suprasegmental' phenomenon in Vedic, traditionally referred to as 'pluti'.

Other phenomena are almost universally considered syntactic, such as the placement of clitic pronouns and particles (CPP), in some languages also of accented pronouns and particles, into the second position of the clause — the so-called Wackernagel's-Law or P2 (= 'Position 2') phenomenon. With various modifications, this position has been argued for instance in Kaisse 1980, 1982, 1985, Pullum & Zwicky 1988, Zwicky 1977, 1985, and recently Nevis 1986, 1990a,b. The arguments of the latter, based on data from a variety of Uralic languages, are especially strong in favor of a syntactic approach to CPP.

Instead of providing a detailed critique of the arguments and evidence of these 'syntactic' approaches to CPP, I will accept the view — uncontroversial in my view for the modern Romance languages, modern Greek, Albanian, and Macedonian — that CPP is a matter of syntax in some languages. From this, however, it does not follow (as Nevis seems to assume) that it is a syntactic phenomenon in ALL languages. In fact, for at least one language, Serbo-Croatian, Radanović-Kocić 1988 and Inkelas & Zec 1988, Zec & Inkelas 1990 have provided apparently independent arguments that clitic placement must be accounted for in the prosodic component of the grammar, i.e. in Phonological Form. These arguments are further examined in §4.2 and §5 below.

This paper offers a broader examination of the issue and provides strong evidence that CPP and a number of other phenomena that are commonly considered syntactic should in fact be accounted for in Phonological Form (PF).[1]

I begin with an examination of more clearly phonological phenomena such as Vedic finite verb accentuation for which a PF account is relatively uncontroversial, given the clearly phonological nature of accentuation. I then discuss the P2 placement of clitics and similar elements for which a PF account requires more justification, since we are dealing with 'movement' phenomena which appear to belong in the syntax. I conclude with a brief discussion of phenomena such as the 'dummy-*es*' of Modern German impersonal passives. Even though a PF account for these phenomena is quite speculative, I show that the account is fruitful for German, by permitting a more plausible formulation of 'Topic deletion'.

1. Vedic finite verb accentuation

Vedic Sanskrit finite verb accentuation has traditionally been considered syntactic because it appears to be systematically controlled by syntactic information: Finite verbs are said to be accented in dependent clauses (DCs) but (generally) unaccented in main clauses (MCs), unless initial. Compare (1), where (1a) illustrates the accent difference between MC and DC, and (1b) demonstrates initial main-clause accentuation of the verb.

(1) a. [tásmai víśaḥ svayám evā́ **namante**]$_{MC}$
V
[yásmin brahmā́ pū́rva **éti**]$_{DC}$ (RV 4.50.8)
V
'Even the common people bow to him for whom the brahmin goes first.'

b. [**syā́ma** ˘ íd índrasya śármaṇi]$_{MC}$ (RV 1.4.6c)
V
'May we be under Indra's protection.'

Approaches that subscribe to the autonomy-of-syntax hypothesis may consider it surprising that verb accentuation should ever be considered syntactic. However, this is the general view of traditional scholars. Compare e.g. Delbrück 1888:36-44, 473-476, Speijer 1896:77-78, 79-80, 90, Hettrich 1988:passim, and Klein In Press.

The reasoning behind this treatment is the following: The distinction in finite verb accentuation is conditioned by syntactic factors (MC vs. DC), is said to be absolutely regular, and is therefore considered a syntactic marker, on a par with subordinating conjunctions for which a syntactic account is uncontroversial.

Nevertheless, differential verb accentuation clearly is a phonological phenomenon. Moreover, as widely recognized since Delbrück (1888:37-43) and Oldenberg (1906), Vedic non-initial verb accentuation is not limited to uncontroversially syntactic contexts. For instance, finite verbs are accented in the first clause of coordinated structures of the type (2), nearly regularly so if both of the coordinated clauses contain the conjunctive particle *ca* 'and'.

(2) párā ca **yánti** púnar ā́ ca yanti (RV 1.123.12)
& V [+acct] & V [-acct]
'They both go away and return again.'

Similarly, non-initial finite verbs frequently are accented in the first of two antithetically related clauses, each containing *anya-* 'one; other'; cf. (3). However, as (4) shows, similar antithetical structures fail to exhibit this accentuation.

(3) ā́ ⌒ anyáḥ **króśati** prá ⌒ anyáḥ śaṁsati
V [+acct] V [-acct]
(TS 7.5.9.3)
'One curses, the other one praises.'

(4) sómaṁ anyá úpa ⌒ **asadat** ... karambhám anyá icchati
V[-acct] V [-acct]
(RV 6.57.2)
'One has sat down to soma, ... the other wants gruel.'

Hettrich (1988 with references to earlier similar views) tries to account for all structures of the type (1) - (3), as well as similar, less wide-spread types of constructions, as involving subordination: The clause with the accented verb is claimed to be subordinate to the other clause in that it is not complete without the latter.

While this account works well for MC-DC structures of the type (1), it is less easy to see its relevance for structures like (2) and (3). True, it can be argued that because of its *ca* 'and', the first clause of (2) is not an independent proposition but requires the second to complete it. But the same argument applies to the second clause, which likewise contains *ca* and needs the FIRST to complete it. But as noted, only the first clause contains an accented finite verb.

Similar arguments apply to structures like (3). Moreover, once we compare (3) and (4) — both antithetical and containing *anya-* 'one; other', but only one with accented finite verb — it becomes clear that finite verb accentuation can be accounted for in terms of subordination only at the cost of circularity.

Finally, as even Hettrich admits, passages of the type (5), with accented verb in a uniclausal MC structure, cause considerable difficulties for the view that non-initial verb accentuation always is a sign of subordination.[2]

(5) hánta na éko **véttu** (yádi ható vā vṛtró jī́vati vā)
V [+acct]
(ŚB 4.1.3.2)
'Come on, let one of us know = find out (whether Vṛtra is slain or lives).'

As I have noted elsewhere (Hock 1989, 1990), it appears, then, that verbal accentuation is not an unambiguous signal of syntactic subordination, or of anything truly syntactic. The only thing shared by coordinate passages like (2) and (3) and DC-MC structures of the type (1a) is a fairly vague PRAGMATIC feature of 'special connectedness' between the respective clauses. (For similar conclusions see Gonda 1971:141 and Klein In Press.)

More than that, Klein (In Press) shows that in the poetic text of the Rig-Veda, accentuation of non-initial verbs in MCs is highly constrained by considerations of poetic structure, especially of caesuras and similar aspects of poetic prosody, i.e. PHONOLOGICAL factors. Klein concludes that MC verb accentuation is a matter of 'parole', while (by implication) DC verb accentuation is a matter of 'langue' and thus, presumably, still a syntactic phenomenon.

I would go farther than that and claim that ALL aspects of verb accentuation belong in the phonology, not the syntax.

First, Klein's approach would have to postulate essentially the same phonological rule twice, both in the syntax and in the phonology. An approach which avoids this violation of Occam's Razor would seem preferable.

Secondly, by its very nature, verb accentuation is a phonological phenomenon. In fact, the traditional account, distinguishing between 'accenting' and 'non-accenting' contexts, is misleading. It suggests that verbs are inherently unaccented and that there is a conditioned accent placement or INSERTION in 'accenting contexts'.

Now, such an account may be correct as regards the accentuation of vocatives, which like finite verbs are accented in initial position, but unaccented elsewhere. Here, the accent always falls on the INITIAL syllable, irrespective of where it occurs underlyingly.[3] It is therefore possible to argue for a rule of accent INSERTION.[4] In finite verbs, by contrast, accentuation is not restricted to a particular syllable. Rather, in 'accenting' contexts, verbs surface with the same accent that they have UNDERLYINGLY.[5] The difference between accented and unaccented finite verbs, thus, involves the DELETION of underlying accent in 'non-accenting' contexts. Put differently, finite verb accentuation cannot be attributed to accent insertion and thus cannot be considered similar to the insertion of syntactic markers such as relative pronouns.

Finally, while in cases like (1) accentuation appears to be sensitive to syntactic distinctions, it is not at all clear that this distinction actually involves syntactic subordination (cf. Hock 1989). Moreover, in structures like (2) - (5) accentuation is clearly sensitive to NON-SYNTACTIC considerations, including PRAGMATIC ones ('special connectedness') and purely PHONOLOGICAL ones (poetic phrasing).

In this regard, an additional element, well-known in traditional Sanskritist accounts, takes on special significance: Finite MC verbs are accented not only if they are clause-initial (as in (1b)), but also when they occur at the beginning of a poetic run-on line; cf. (6). Poetic line structure, however, being sensitive to notions such as syllable weight and syllable count, can and should not be accounted for in the syntax,

but must be a matter of PROSODIC STRUCTURE. Even the accentuation of 'initial' finite verbs, thus, must be phonological, not syntactic.[6]

(6) surūpakṛtnúm ūtáye sudúghām iva godúhe ǀ
juhūmási dyávi-dyavi (RV 1.4.1)
V [+acct]
'Day by day we invoke the one assuming a beautiful shape for help, just as (we invoke) the good milch cow for the milker.'

There is only one grammatical component in which ALL of the factors — syntactic, pragmatic, and phonological — controlling finite verb accentuation can play a role. This is the phonological component. True, 'orthodox' transformational syntax holds that Logical Form, presumably the component relevant for pragmatic considerations, cannot 'talk' directly to PF but must be linked to it through the syntax. However, Woodbury (1987) has demonstrated that this assumption cannot be maintained. Note further the increasing literature on the relation between semantics and prosodic phonology; cf. Selkirk 1984, Nespor & Vogel 1986, Vogel & Kenesei 1987 and 1990. See also Hock In Press b on the similar relationship between pragmatics, syntax, and morphology as regards Sanskrit agreement.

2. Vedic 'pluti'

A similar phenomenon in Vedic Sanskrit is the so-called PLUTI, a trimoric pronunciation (indicated by the numeral 3, generally of the final vowels of clause-final words, often with an extra accent on the pluti vowel, in some case also with nasalization of the vowel (marked by *m̐*); cf. e.g. (7).

(7) [adháḥ svid **āsī́3d**] [upári svid **āsī3t**] (RV 10.129.5)
V V
'Was there an above, was there a below?'

Now, trimoric pronunciation, extra accentuation, and nasalization all clearly are PHONOLOGICAL phenomena. But like initial finite verb accentuation, pluti has been considered a syntactic phenomenon in much of traditional literature; cf. e.g. Delbrück 1888:551-553, Speijer 1896:78-79, Strunk 1983 passim. And again, the reason for such an analysis is that pluti can be argued to have been completely regular in at least one syntactic context, viz. 'disjunctive questions' of the type (7). Pluti has therefore been compared in function to question particles which are routinely assumed to be introduced in the syntax, cf. e.g. Skt. *kim* in (8).

(8) **kím** ā́d utā́si ... manyumáttamaḥ (RV 4.30.7)
Q
'And aren't you also the fiercest ...?'

Strunk (1983) further argues that the use of pluti was a regular feature of clause-final words in ordinary yes-no questions as well, as in (9). And he plausibly compares pluti to the rising intonation in yes-no questions of many other languages (including English).

(9) (a)ver apo **(a)dhvaryā3u** (AB 2.20.10)
'Have you seen the waters, Adhvaryu?'

However, pluti is also found outside questions, especially with vocatives and imperatives, contexts for which a syntactic account is rejected even by Strunk. In addition, it occurs in 'topic structures' of the type (10). Significantly, as shown by example (11), from the same text as (10), topic structures of this type do not exhibit pluti with complete regularity.

(10) taṁ yan **nabhayantī3m̆** | śrathayanty evainaṁ tat
RP V
(AB 6.24.2)
'In that they tear it up, thereby they loosen it.'

(11) sa yat prathamaṁ ṣaḍ vālakhilyānāṁ sūktāni **viharati**
RP V
prāṇaṁ ca tad vācaṁ ca viharati (AB 6.24.10)
'In that he inverts the six verses of the vālakhilyas for the first time thereby he reverses breath and speech.'

A closer comparison of (10) and (11) yields another difference, beside the presence or absence of pluti: In (10), the pluti-marked clause-final verb of the topic structure, *nabhayantī3m̆*, is followed by a 'daṇḍa' (|), while its non-pluti-marked counterpart in (11), *viharati*, is not. Now, the daṇḍa ordinarily marks major breaks in discourse (quite often beyond the sentence level); and these breaks can be expected to coincide with major breaks in phonological phrasing. (In addition, it marks line breaks in poetry.) Its presence in (10) suggests that the topic structure in this example is followed by a more noticeable break in phonological phrasing than the one in (11).

If we accept Strunk's plausible explanation of clause-final pluti in yes-no questions as comparable to the rising intonation of other languages, we can account for the difference between (10) and (11) along similar, 'intonational' lines: (10) apparently was phrased with a major intonational break after the topic structure and, just as in languages like English, that break was accompanied by a rise in intonation. The passage in (11), on the other hand, appears to have been uttered without such a break and, thus, without any rise in intonation. Compare the English counterparts in (10') and (11'), where ↑ indicates rising intonation.

(10') In that they tear it up ↑, thereby they loosen it.

(11') In that he inverts the six verses of the vālakhilyas for the first time thereby he reverses breath and speech.

Significantly, the two structures in (10) and (11) are syntactically alike: In both of them, an adverbial relative clause functioning as a topic structure is followed by a main clause. Syntax, thus, will not account for the presence or absence of pluti. Rather, pluti is connected with rising intonation at certain breaks in PHONOLOGICAL PHRASING. This is not to say that intonational phenomena are entirely without syntactic motivation. For instance, rising intonation is a cross-linguistic tendency in yes-no questions and, within sentences, breaks with rising intonation are more likely to occur at clause boundaries than within clauses. But the evidence of fully observable languages such as English suggests that other factors play a role, too, such as rate of speech, as well as pragmatic considerations such as emphasis. (For recent work on prosodic structure and its indirect relation to syntax see especially Selkirk 1984 and Nespor & Vogel 1986, as well as many of the contributions to Inkelas & Zec 1990.)

As in the case of initial verb accentuation, therefore, pluti cannot be accounted for purely in terms of syntax, but must be accounted for in a component of the grammar in which the various — syntactic, pragmatic, and prosodic — types of information conditioning pluti are available, viz. in PF.

3. Vedic 'Initial Strings'

As noted earlier, scholars subscribing to the 'autonomy-of-syntax' hypothesis would have no difficulties in accepting that accentuation, trimoricity (etc.) should be accounted for in PF, even if there may be a certain degree of syntactic conditioning. In fact, similar phenomena of phonological processes with various degrees of syntactic sensitivity have been observed in many other, non-Indo-European languages, especially in the Bantu family; cf. e.g. Kisseberth & Abasheikh 1974, Downing 1988, Kamwangamalu 1988, Bickmore 1990, Kanerva 1990, Kenstowicz & Kisseberth 1990, Kidima 1990, McHugh 1990, Odden 1990a,b. The only issue on which there is some disagreement is whether the phenomena are better accounted for in a pre-syntactic or post-syntactic component of the grammar; cf. especially Hayes 1990 vs. Odden 1990b. This issue is taken up again in §4.3 below.

In this and the following sections I argue that even the placement of clitic pronouns and particles (and syntactically similar accented particles) within the clause must in certain languages be accounted for, not in the syntax, but in PF. This claim clearly is more controversial and requires strong evidence to support it. I believe that a number of Indo-European languages that I am familiar with, or for which I have what I consider to be reliable data, do provide

that kind of evidence. No doubt, similar evidence can be found in numerous non-Indo-European languages; but data for these are not as easily accessible to me.

Let me begin the discussion with evidence from the language covered in the preceding two sections, Vedic Sanskrit.

Ever since Wackernagel's pioneering study of 1892, it has been known that in the early Indo-European languages, clitic particles and pronouns, as well as accented, presumably non-clitic particles, 'tended' to be placed in clause-second position (P2). Drawing on Wackernagel's data and arguments, as well as those of other Indo-Europanists, I have shown (Hock 1982b) that if there is a multiple 'movement' of such clitics and particles to clause-second position, they stack up in a fixed order within 'INITIAL STRINGS'. The most up-to-date version of the template for these strings is given in (12) below.[7] Selected examples are presented in (13), with elements placed into the string marked in boldface. Generally, only a subset of the slots within the string is occupied; cf. (13a-c). But (13d) gives an example with every position filled. Note that a limited amount of 'doubling up' is possible within positions 2 - 5 and that the order of elements doubling up within a given slot is not as strictly fixed as the basic slot order. Further, in the totality of the Vedic language, placement of clitics, particles, and other elements into the initial string, although quite common, is optional. (Vedic-Prose texts, however, vastly prefer initial-string placement.) In the early poetic language, members of the class Ď of 'accented pronouns' (demonstrative *tád, etád*, relative *yád*, and interrogative *kím*) may occur in position 3. Finally, in my 1982b paper, I argued that under certain conditions verbs could be placed into the same non-initial position as accented pronouns.

(12) Vedic 'Initial Strings'

(NEXUS)	1	2	3	4	5
átho	X́/Ď	P	Ṕ	E	Ď

Where: NEXUS = sentence connector
P = unaccented particle
Ṕ = accented particle
E = clitic pronoun
Ď = accented pronoun (*tád, etád, yád, kím*)
X́ = other accented initial element (≠ Ṕ or Ď)

(13) a. prá **ha vā́ enaṁ** páśavo viśanti (MS 1.8.2)
(X́ P Ṕ E ...)
'The cattle go to him.'

b. śíro **vā́ etád** yajñásya yád puroḍā́śaḥ (MS 1.4.8)
(X́ Ṕ Ď ...)
'This is the head of the sacrifice, viz. the sacrificial cake.'

c. dviṣántaṁ **ha ‿ asya tát** bhrā́tṛvyam
(X́ P E Ď ...)
abhyátiricyate (ŚB 1.9.1.18)
'That remains for his hateful enemy.'

d. daívīṁ **ca vā́vá ‿ asmā etád** víśaṁ
(X́ P Ṕ E Ď ...)
mānuṣī́ṁ ca ‿ ánuvartmānau karoti (MS 3.3.10)
'He then makes both the divine tribe and the human one subserviant to him.'

Although Hale (1987) attempts to account for the Vedic P2 phenomena in syntactic terms, several facts argue for a PF analysis.

First, as Schäufele (1991b) demonstrates, attempts to account for P2 in the syntax run into considerable difficulties. These difficulties, to be sure, could be overcome in a transformational approach by a proliferation of left-peripheral 'landing sites', such as COMP, INFL, AGR, or the corresponding SPEC positions, combined, if necessary, with additional adjunction sites.

However, even if a syntactic approach can be found to place unaccented particles, accented particles, clitic pronouns, and accented pronouns into initial strings AND in that order, this enterprise would fail to EXPLAIN the ordering of elements. A phonological account, by contrast, would provide such an explanation: Potentially, i.e., if both unaccented and accented particles, as well as clitic and accented pronouns are present, they are stacked up in a pattern of alternating accentuation (X́/Ď P Ṕ E Ď), a common target of phonological accentuation rules.

Now, the syntactic account could be maintained and be made explanatory, if all clitics, particles, etc. moved into a SINGLE designated landing site and if their RELATIVE ORDERING were subsequently determined in PF, in terms of the phonological accent information available in that component of the grammar. But in that case, part of the ordering of P2 elements is accounted for, not in the syntax, but in PF.

Another, even more clearly syntactic alternative would let the syntax generate particles and pronouns freely, or in a single adjunction site (as above), and postulate a syntactic 'surface filter' along the lines of Perlmutter (1971) or Maling & Zaenen (1981)[8] which would disallow sequences not in conformity with the template in (12). (See Vogel & Kenesei (1990:348) for a similar analysis of Modern Hebrew data first presented in Hetzron 1972.) Such an account has been proposed in Schäufele 1991 (written in 1987), but withdrawn in Schäufele 1990. To the extent that the frequently voiced misgivings about the excessive powers of filters (cf. e.g. Maling & Zaenen 1981) can be overcome, this approach would accomplish the same thing as the phonological account argued for above. However, like the purely syn-

tactic account rejected earlier, it would suffer from being entirely ad hoc and failing to EXPLAIN the ordering of the elements. (See below for a possible PF variant of this approach.)

Finally, and most devastating for any purely syntactic approach, while Vedic P2 elements generally stack up after the first element of the clause (cf. (13) above), in metrical poetry, they may be placed after the first element of a 'run-on' line, rather than of the clause; cf. (14a) below (with P2 elements highlighted).[9] That is, just like finite verb accentuation in MCs, the placement of particles may be sensitive to the purely phonological criterion of POETIC PHRASING. There are, moreover, examples of P2 elements occurring both after the first element of the clause and after the first word of its 'run-on' continuation; cf. (14b). (In contrast, run-on lines with accented or unaccented particles in initial position are ungrammatical.) That is, a clause may simultaneously exhibit P2 that is 'syntactically' motivated (in terms of clause boundaries) and phonologically (in terms of phonological phrasing).

(14) a. yásya gā́vāv aruṣā́ sūyavasyū́ |
whose bulls ruddy used to good pasture
antár **ū ṣú** cárato rérihāṇā
inside P Ṕ 'well' go licking
(RV 6.27.7a/b)
'Whose two ruddy bulls, used to good pasture, go well inside licking (one another) ...'

b. uśánn **u ṣú ṇaḥ** sumánā upāké |
wishing P Ṕ 'well' E in good spirits at
sómasya **nú** súṣutasya svadhāvaḥ | pā́ ...
soma Ṕ 'now' well-pressed self-willed drink
(RV 4.20.4)
'Wishing (it), well in good spirits now at our well-pressed soma, O self-willed one, drink ...'

A syntactic account for structures of this type would seem to be possible only by abandoning the autonomy-of-syntax hypothesis and by accepting syntactic processes that are sensitive to purely phonological considerations.

True, there is one alternative left to those who are unwilling to concede that P2 cannot be accounted for in a phonology-free syntax. This is the claim that the syntax generates clitics and particles freely in ANY position within the clause and that PF eventually 'weeds out' those structures that are not in accordance with its requirements, including phonological phrasing. (Compare the very similar argument discussed in §4.2 below.) However, this approach is tantamount to saying that syntax has nothing interesting to say on the nature of

Vedic P2. It is therefore legitimate to ask why we should accept the argument that P2 is a matter of syntax.

A phonological account, by contrast, has no difficulty with structures of the type (14), since syntactic information (clause breaks etc.) and phonological/prosodic information (line breaks) are both available in PF. Moreover, as noted earlier, a phonological account can explain the internal structure of the initial strings, whereas a purely syntactic approach can at best provide an ad-hoc account.

4. P2 placement in other Indo-European languages

4.1. Early Romance clitics

The general principle of modern Romance clitic placement is that it is 'verb-oriented': Clitics directly follow imperatives and non-finite verbs, they directly precede the verb elsewhere. While the beginnings of this system appear fairly early, the oldest Romance system is of a different nature. Ignoring 'small clauses' with non-finite verbs, clitics generally follow any INITIAL verb — no matter what its modality — and precede the verb elsewhere — again, without regard to modality. Compare (15a) vs. (15b), where (15a) illustrates clitic placement after a non-imperative initial verb and (15b) before a non-initial imperative. In addition, structures occur with clitics following an initial NON-verbal constituent and separated from the verb by intervening material; cf. e.g. (15c). Ramsden (1963:134-158) refers to the latter pattern as 'interpolation' and considers it an innovation. However, it is much more likely to preserve an older P2 pattern, from which the 'verb-based' system of general early Romance and the modern Romance languages developed through rebracketing; cf. Pearce 1984, 1990.[10]

(15) a. grádan- **se** Rrachel e Vidas con averes monedados
V clit. subj.
(El Cid 172; Old Spanish)
'Rachel and Vidas were pleased (for) themselves with the money-rich treasures.'
falt **li** le coer (Roland 2019; Old French)
V clit. subject
'(His) heart fails him.'

b. apriessa **vos** guarnid (El Cid 986; Old Spanish)
quickly clit. V
'Prepare yourselves quickly.'
ore **ne vus** esmaiez (Roland 27; Old French)
now clit. clit. V
'Now do not frighten yourself.'

c. si **les** yo visquier (El Cid 825; Old Spanish)
if clit. subj. V
'If I should survive for them ...'

What is significant for present purposes is that in the early Romance system, 'initial' position of the verb cannot be exclusively defined in syntactic terms (as clause- or sentence-initial), but just as in Vedic Sanskrit, often must be defined PROSODICALLY, in terms of line-initial environment or the position after the caesura. Compare the examples in (16a) and (16b), as well as Ramsden (1963:passim) who correctly characterizes clitic placement as a 'rhythmic' phenomenon. (In (16), line breaks are marked by |, caesuras, by :. Note that post-verbal clitic placement which is not clause-initial occurs more frequently after caesura, presumably because line breaks more commonly coincide with sentence or clause boundaries. At the same time, the position after the caesura, being phonologically less well defined, exhibits frequent forerunners of the later Romance pattern, in which clitics are placed before non-clause-initial or non-imperative verbs, even if they occur line-initially or after caesura.)

(16) a. Martín Antolínez : el burgalés conplido |
a Mio Cid e los suyos : abásta **les** de pan e de vino |
V clit.
(El Cid 65-66)
'Martín Antolínez, the Honorable of Burgos, fully gave bread and wine to My Cid and his (people).'

b. Con la merced de Dios : e de Sancta María madre |
créce- **m** el coraçón : porque estades delant
V clit.
(El Cid 1654-55)
'With the grace of God and of St. Mary, his mother, (my) heart grows on me, since you are here.'

As in Vedic Sanskrit, therefore, P2 (or post-verbal) clitic placement in early Romance must be accounted for in PF, not in the syntax.[11]

4.2. Serbo-Croatian clitics

Serbo-Croatian is similar to Vedic Sanskrit in that it has fairly elaborate initial strings. But it saliently differs from Vedic in that the words following the initial element are all clitic. Moreover, in modern Serbo-Croatian, there are severe restrictions on 'doubling up' in the positions or slots of the string. Following Radanović-Kocić (1988), the template accounting for the ordering within the strings can be stated as in (17).

(17) Serbo-Croatian initial strings:

X li Aux/Copula D A/G se je

where: X = a constituent or part thereof, or a subordinating conjunction
li = the yes/no question particle

Aux/Cop.	=	An auxiliary or the copula, except *je*, which appears in the last position
D	=	a dative pronominal clitic
A/G	=	an accusative/genitive pronominal clitic, except reflexive *se* which appears in penult position
se	=	the 'reflexive' clitic
je	=	third person singular present of the verb 'to be'

As in many other languages with P2 clitics,[12] there are certain complications regarding the definition of 'first element'. The examples in (18) show that if the initial constituent consists of more than one word, it is possible to place the clitics either after the first word of that constituent or after the entire constituent. According to Radanović-Kocić (1988), the variant (18a), with clitics after the first word, now tends to be limited to subject constituents, is more common in Croatian, but is becoming obsolescent in all of Serbo-Croatian. Although under some conditions, clitic placement may be preferred after an EMPHASIZED element of the first constitutent (cf. (19a,b)), it is not ungrammatical to place the clitic differently (cf. (19c,d)). That is, the difference in clitic placement cannot be attributed to pragmatic factors or to contrastive accent placement. Radanović-Kocić is probably correct in considering the pattern with clitic placement after the first word an archaism.

(18) a. Moj **je** brat došao
my AUX brother come
'My brother has come.'

b. Moj brat **je** došao

(19) a. MOJ **je** brat došao, ne tvoj
neg. your
'MY brother has come, not YOURS.'

b. Moj BRAT **je** došao, ne sestra
sister
'My BROTHER has come, not (my) SISTER.'

c. MOJ brat **je** došao, ne tvoj
'MY brother has come, not YOURS.'

d. Moj **je** BRAT došao, ne sestra
'My BROTHER has come, not (my) SISTER.'

In other contexts, accentuation does seem to play a conditioning role in clitic placement. As noted in Inkelas & Zec 1988 and Zec & Inkelas 1990, the coordinating conjunctions *ali* and *pa* cannot host clitics if they appear in their usual unaccented form; cf. (20a). If they are accented, they can; cf. (20b).

(20) a. Mi smo zvonili
We Aux ring
ali niko **nam** nije otvorio
but no one clit. neg. open
'We rang, but nobody opened the door for us.'

b. Mi smo zvonili
We Aux ring
ALI **nam** niko nije otvorio
but clit. no one neg. open
'We rang, BUT nobody opened the door for us.'

Zec and Inkelas (1990:368) argue that under a syntactic approach, this difference in clitic placement can only be accounted for by introducing an [ad hoc] diacritic marking for accented *ali* and *pa*. 'But under a prosodic account, we can capture all of the clitic facts with one simple statement: clitics follow a phonological [i.e. accent-bearing] word.'

The first part of this conclusion has been questioned by Vogel and Kenesei (1990:348-351) who would let the syntax freely generate clitics 'in (almost) any position' or, in the present case perhaps, after the first or second element,[13] and then permit the phonology to eliminate those structures which violate the condition that clitics be preceded by a phonological word. Just as the alternative, syntactic approaches to Vedic Sanskrit P2, this approach manages to 'account' for the facts by means of a syntactic solution, but that solution lacks any explanatory power.

Like Vedic and early Romance, Serbo-Croatian presents additional evidence in favor of a phonological account, in the fact that clitic placement is sensitive to phonological phrasing. Although there are minor differences of detail, the apparently independent accounts in Radanović-Kocić 1988 and Inkelas & Zec 1988, Zec & Inkelas 1990 agree in observing that the Serbo-Croatian clitics often do not stack up after the first word or constituent of the clause, but after the second, as in (21). (Examples are from Radanović-Kocić 1988.)

(21) a. svoje probleme i dileme | lingvistika **će** rešavati
its problems and dilemmas linguistics Aux solve
'Linguistics will solve its problems and dilemmas ...'

b. * svoje probleme i dileme **će** lingvistika rešavati

c. Za svečanu priliku | BBC **je** odbacio dvosmislenost
On special occasion BBC Aux. give up double talk
'On a special occasion, the BBC has given up its (usual) double talk.'

d. ?? Za svečanu priliku **je** BBC odbacio dvosmislenost

e. Sapiru | jezik **je** instrumenat ...
Sapir language Cop. instrument
'For Sapir, language is an instrument ...'

f. Sapiru **je** jezik instrumenat ...
'For Sapir language is an instrument ...'

Both Radanović-Kocić and Inkelas & Zec further agree that the 'heaviness', 'complexity', or 'length' of the first constituent plays a role in what may be called delayed clitic placement, after the second constituent. Inkelas & Zec, in fact, claim that the 'heaviness' (etc.) of the first element is the crucial criterion for delayed clitic placement.

If we limit ourselves to evidence of the type (21a-b), this is indeed a possible analysis. However, in (21c-d), heaviness of the first constituent does not completely rule out 'early' clitic placement. And (21e-f) show variation between early and delayed placement even after single-word initial constituents.

As Radanović-Kocić observes, what is really relevant is phonological phrasing: If there is a break in phonological phrasing after the first constituent (marked by | in the above examples), then clitic placement is delayed; otherwise, early placement occurs. And while 'heavy' initial constituents are more likely to be followed by a prosodic break, there is no direct correlation between heaviness and prosodic break. Rephrasing Radanović-Kocić's formulation (1988:134) we can thus, for the time being (but see §5.1.3 and §6 below), state the productive rule for Serbo-Croatian clitic placement as in (22). (This rule, then, must be supplemented by the template in (17) to account for the relative ordering of the clitic elements.)[14]

(22) Serbo-Croatian clitic placement rule:

> Place all [+ clitic] elements into the position after the first constituent that forms a prosodic phrase with the rest of the clause.

Serbo-Croatian, thus, can be added to the languages presenting uncontroversial evidence that clitic (etc.) placement must be accounted for in PF, after the rules responsible for prosodic phrasing have applied.

4.3. Pashto clitics

Although intended to show that accent and morphological structure are relevant for the syntactic rule of clitic placement, Tegey's early and pioneering dissertation (1977) offers additional ample evidence that Pashto clitic placement must be accounted for in PF, unless we are willing to abandon the autonomy-of-syntax hypothesis.

Similar to Serbo-Croatian, Pashto permits extensive and quite complex strings of clitic pronouns, modals, and sentential particles, placed after a 'first element' in the clause. Following Tegey, the template accounting for the relative ordering of clitics can be formulated as in (23). Significantly, most of the positions in the template are de-

fined in terms of PHONOLOGICAL SHAPE, not grammatical function: As Tegey observes, with the exception of positions 4 and 5, no sequences of phonologically identical clitics are permitted, cf. e.g. (24a) and (25a). Note that (24b) and (25b) show that there is no syntactic or functional constraint against the clitic sequence in the a.-versions of (24) and (25). While in (25), the prohibited sequence is avoided by using a non-clitic form of the second person singular pronoun, in (24) it is avoided by 'deleting' one of the two occurrences of *me*; cf. (24c). Even for the one permitted sequence of phonologically identical clitics, viz. 4 + 5, his dialect prefers structures of the type (26a), with non-identical phonological shape, to the identical clitics of type (26b). The internal structure of Pashto initial strings thus crucially needs to refer to PHONOLOGICAL information, not just to the syntax.

(23) Pashto initial strings

X	xo	ba	am	am mo	sg. 1	de	3rd pers.	no
1	2	3	4	5	6	7	8	9

where: X = a constituent or part thereof
xo = particle ('indeed, really, of course')
ba = modal ('will, might, must, should, may')
am = first and second plural clitic
mo = first and second plural clitic
sg. 1 = first singular clitic *me*
de = modal ('should, had better, let') AND second singular clitic
3rd pers. = third person clitic *ye*
no = particle ('then')

(24) a. *wror **me me** wahi
brother my me beat
'My brother beats me.'
b. wror **me de** wahi
brother my you beat
'My brother beats you.'
c. wror **me** wahi
'(My) brother beats me.'/'My brother beats (me).'

(25) a. *tor **de** **de** wuwahi
Tor mod. sg.2 clit. hit
'Tor should hit you.'
b. tor **de** to wuwahi
Tor mod. sg.2 non-clit. hit
'Tor should hit you.'

(26) a. kitɔb **a m** **m o** rɔwoɽə
book our we bought
'We bought our book.'
b. kitɔb **a m** **a m** rɔwoɽə
book our we bought
'We bought our book.'

As Tegey shows, phonological considerations also play a role as regards a reordering process within the initial string: Although ordinarily the third person clitic *ye* occurs in a very 'late' position within the string, it may switch to initial position, IF it then can be incorporated into the syllabic structure of the host by an independently required process. Note that if switched in this manner, the clitic MUST be incorporated; structures with *ye* switched but not incorporated are ungrammatical. Put differently, *ye* switches only in order to undergo the PHONOLOGICAL process of incorporation. Compare (27), where (27a) illustrates the basic order, (27b) the ungrammaticality of the switched order without incorporation, (27c) the grammatical incorporated structure, and (27d) independent evidence for *ye*-incorporation (where *ye* is placed into the string immediately after X to begin with)

(27) a. tə **x o** **b a** **y e** pezane
you indeed mod. he know
'You must indeed know him.'
b. *tə **y e** **x o** **b a** pezane
c. **te** **x o** **b a** pezane
d. zə **y e** gorəm
I he see
→ **ze** gorəm
'I see him.'

However, Tegey's evidence that phonological and other non-syntactic information is required for clitic placement is not limited to the relative order of clitics within the string. He shows that information of this type also is needed to determine the initial element that serves as hosts for the clitics.

Tegey amasses an impressive amount of evidence which shows that, as in Serbo-Croatian (cf. (20) above), accent plays a role. Two major types of evidence can be distinguished. One is the fact that unaccented prepositional and adverbial phrases involving pronouns do not 'count' as first constituents, and clitics follow the first accented element after these unaccented elements; cf. (28). This generalization clearly cannot be captured by a purely syntactic account since *rɔ ta* and *pe* are full syntactic constituents. Rather, it requires the PHONOLOICAL information that these constituents are unaccented and that the first accented element of the clause is the third constituent, *gɔḍə́*.

(28) a. rɔ ta pe gɔḍá **de**
me for by him sew you (ergative)
'You were having him sew it for me.'
b. *rɔ ta **de** pe gɔḍá
c. *rɔ ta pe **de** gɔḍá

The other piece of evidence concerns structures with clause-initial verbs.[15] 'Compound' verbs, consisting of prefix + verb, exhibit accent variation correlated with aspect: Perfectives accent the prefix, imperfectives, the verb; cf. (29). Interestingly, the same accent variation is found in a group of lexically unprefixed verbs whose stem begins in *a-*, except that accent variation here is an optional phenomenon, without aspectual conditioning; cf. (30). As Tegey observes (1977:126, note 4), historically, the *a-* of these verbs is a prefix. However, synchronically, 'the stem of these verbs ... is not analyzable into more than one morpheme.' (93) Thus, the *a-* and the *-xistəl* in (30) 'alone convey no separate meaning and none of them appears independently or as a morpheme in any other lexical item in the language.' (94).

(29) a. tor ṭél-wɔhə
'Tor pushed' (perf.)
b. tor ṭel-wɔhá
'Tor was pushing' (imperf.)

(30) a. Tor áxistələ
'Tor was buying' (imperf.)
b. Tor axistálə
'Tor was buying' (imperf.)

Now, if verbs of the type (29) and (30) are clause-initial, clitics are placed after the whole verb only if the verb is accented on a non-initial syllable (the final or penult). They go after the FIRST SYLLABLE of the verb if that syllable is accented; cf. (29') and (30'). Different placements are ungrammatical. (In these examples, the value of the clitic is first person singular ergative.)

(29') a. ṭél- **me-** wɔhə
'I pushed' (perf.)
b. ṭel- wɔhá **-me**
'I was pushing' (imperf.)

(30') a. á- **me-** xistələ
'I was buying' (imperf.)
b. a- xistálə **me**
'I was buying' (imperf.)

Looking only at (29') it might be possible to propose an analysis along the lines of German 'separable-prefix' verbs, considering the prefixes to be lexically independent words. In that case, the 'delayed'

clitic placement in (29'b) could be argued to be of the same nature as in (28). For (30'b), however, such an analysis would be begging the question, since there is no synchronic evidence that the initial *a-* of these verbs constitutes an independent meaning-bearing unit. In addition, of course, we are faced with the same difficulty as in (28): The crucial conditioning for clitic placement is ACCENT, a phonological phenomenon. More than that: The pattern in (30') shows that the 'first element', the X of the template in (23), may be identifiable not even on morphological grounds, but only phonologically, as the first SYLLABLE of a particular type of verb.

Finally, Tegey provides evidence that clitic placement must be ordered AFTER a PHONOLOGICAL RULE of vowel coalescence. By way of background, note that in clauses beginning in a combination of the negative particles *nə* and *mə*[16] plus verb, clitics are placed between the negative particle and the verb; cf. (31). Now, the final *ə* of the same particles undergoes a rule of coalescence with the initial *a-* of verbs of the type (30)/(30') above, the outcome being *ɔ*; cf. e.g. (32). Interestingly, as examples like (33a) illustrate, clitic placement takes place into negative particle + verb combinations AFTER vowel coalescence, inserting the clitic between the coalesced vowel *ɔ* and the (rest of the) verb. Clitic insertion after unchanged, underlying *nə* is not acceptable. Compare the ungrammatical (33b) which by the rule of 'incorporation' illustrated in (27c,d) would have to surface as the equally ungrammatical (33c). That is, clitic placement seems to have to take place SOLIDLY in the PHONOLOGY, BETWEEN the two phonological rules of incorporation and coalescence.

(31) nə **y e** skuṇḍi
neg. it pinch
'He is not pinching it.'

(32) nə axli
→ nɔxli
'He is not buying.'

(33) a. nɔ **y e** xli
'He is not buying it.'
b. *nə **y e** axli
c. ***ne** axli

One might be tempted to avoid this conclusion by resorting to Hayes's (1990) concept of 'precompilation' in a pre-syntactic component of Lexical Phonology. Whatever the precise formalism, precompilation must be assumed to produce the allomorphs *nɔ* and *mɔ* for the negatives *nə* and *mə* and *a*-less allomorphs for *a*-initial verbs (under certain conditions of proximity). These allomorphs would then be inserted at the point of Lexical Insertion within the syntax, not only in the syntactic frame of (32), but also of (33). Clitics, then,

would be inserted after the allomorph *nɔ*. Compare the informal presentation in (34).

(34) a. Precompilation in the pre-syntactic phonology:

i. nə → nɔ (if followed by *a*-initial verbs ± intervening clitic)

ii. a- → Ø (if preceded by neg. *nə, mə-* ± intervening clitic)

b. Lexical insertion in the syntax

nɔ **y e** xli
[in frame i.] [in frame ii.]
'He is not buying it.'

However to be consistent, we would also have to employ the device of precompilation for the incorporation process illustated in (27c). That is, we would have to claim that *ə*-final words plus the clitic *ye* yield preconfigured incorporated single words ending in *-e*, and that when clitic *ye* is to be inserted in the syntax, we have a choice of either inserting the precompiled incorporated structure in *--e* or the normal allomorphs in their appropriate places within the initial string. Compare (35).

(35) a. Precompilation in the pre-syntactic phonology:

i. -ə + ye → -e
[+ clit.]

ii. -ə + ye → -e (optional if clitics of classes 2 - 7 in (23) above are present)
[+ clit.]

b. Lexical insertion in the syntax

z e gorəm (= zə **ye** ...)
[in frame i.]
'I see it.'

tə **x o** **b a** **y e** pezane
OR **te** **x o** **b a** pezane
[in frame ii.]
'You must indeed know him.'

While precompilation can indeed account for the attested forms in (27c,d) and (33a), it is difficult to see how it would prevent unacceptable forms of the type (33c) from arising: Given the elements to be inserted in (33), it is not clear why we should choose the account in (34), and not the equally possible account in (36) which operates with the precompilation of (35a.i). In fact, given that *nə* and the clitic *ye* are direct neighbors, the latter precompilation should apply pref-

erentially — unless we added the condition 'not if the *-ə* is part of a negative particle and *ye* is followed by an *a*-initial verb'. Put differently, here we run into the difficulties alluded to by Odden (1990:83) which arise when there is an overlap between precompilation frames.

(36) a. Precompilation in the pre-syntactic phonology:
i. -ə + ye → -e
[+ clit.]

b. Lexical insertion in the syntax:
*ne axli (= nə ye axli)
[in frame i.]
'He is not buying it.'

These difficulties are avoided if we adopt the view that clitic placement takes place in a POST-SYNTACTIC PHONOLOGICAL FORM, where it can be ordered between the two phonological rules of coalescence and incorporation. Moreover, accounting for clitic placement in PF makes it possible for the process to be sensitive to a combination of syntactic and phonological information (the presence or absence of accent on clause-initial constituents), a combination of phonological and morphological information (accented vs. unaccented verbal prefixes), or even purely phonological, even if lexically restricted, information (accented vs. unaccented initial *a-* in a certain class of verbs).

5. Clitic P2 placement in PF: Why and how?

The preceding two sections have shown that in at least four different Indo-European languages (or groups) P2 is sensitive to phonological factors and must therefore be accounted for in PF, not in the syntax.

Before attempting to explain why P2 in these languages is a phonological phenomenon and how it might be accounted for in PF, it is useful to survey the similarities and differences between the different languages.

One feature, solidly shared by all of the languages, is that the clitics and particles in question are P2 elements. Another feature is most strikingly attested to by Pashto and Serbo-Croatian, viz. that what precedes the clitics or particles must bear (some kind of) accent. But as shown by the initial-string template for Vedic in (12), in this language, too, P2 elements must be preceded by an accent bearing element. Finally, although early Romance does not mark accent, the line-initial or post-caesura verbs preceding the phonologically placed clitics in examples of the type (16) can be reasonably assumed to differ from clitics by bearing at least some accent.

There are certain differences as well. For instance, the clitics of early Romance are all pronominal (or pronominal-adverbial), while those of Vedic, Serbo-Croatian, and Pashto include syntactic particles (question markers or 'communicative' particles similar in function to English *after all, you know*, etc.). Those of Serbo-Croatian and Pashto also include auxiliaries or auxiliary-like modal particles. The most important difference, however, is the fact that the P2 elements of early Romance, Serbo-Croatian, and Pashto are all clitics. Those of Vedic include both unaccented, clitic elements and ACCENTED elements which, because of their invariable, apparently underlying accent, would be difficult to classify as clitics. (See also further below.)

Finally, it may be necessary to address the question as to whether the P2 phenomena of these languages are truly independent or whether they may reflect common heritage. This question is especially relevant since, as already noted by Wackernagel (1892), the tendency toward P2 placement of clitics seems to be a feature of the Proto-Indo-European ancestral language; cf. also Hock 1982b and Hale 1987.

For the Romance languages it is quite certain that the P2 placement of pronominal clitics is an innovation: While very Old Latin preserves some traces of the older Indo-European pattern, the classical language patently has lost it. Wanner (1985) finds the earliest evidence for possible P2, beside cliticization within the VP, in Latin texts of the Christian era.

As for Serbo-Croatian, Radanović-Kocić (1988) finds that the earliest (Old Church Slavic) texts have clear P2 evidence only for the question particle *li*, plus two other sentential particles, *bo* 'because' and *že* 'and', which do not survive in modern Serbo-Croatian. Pronominal clitics appear in P2 only under two circumstances: (i) The initial element is a finite verb, in which case all clitic pronouns are placed in P2; (ii) one of the sentential particles appears in P2, in which case dative-marked pronoun clitics may be stacked up after the particle. She concludes that only the sentential particles originally were in P2, and that pronominal clitics started out as clitic on the verb and became P2 elements only secondarily. Since only one of the particles, *že*, can be confidently traced to a PIE clitic antecedent, the relation between the elaborate initial strings of modern Serbo-Croatian and PIE P2 clitic placement is rather tenuous. Still, the basic P2 PATTERN may be inherited.

The situation may be the same for Pashto and Vedic: Although both are members of the Indo-Iranian subfamily of Indo-European, they are separated from each other by some 3000 years. The details of their initial strings and of the elements that go into them are quite different. Still, the basic P2 pattern may be inherited in both

languages, since Avestan, the earliest attested East Iranian language, has initial strings very similar to those of Vedic; cf. Hock 1982b and Hale 1987.[17]

Even so, the fact that early Romance exhibits an independent innovation, combined with massive evidence for P2 as a cross-linguistic tendency for clitic placement (cf. especially Steele 1975, 1977, 1978), invites caution and requires us to explain P2 not simply as inheritance from a — possibly idiosyncratic — Proto-Indo-European antecedent.

5.1. Why P2?

As observed earlier, Nevis (1986, 1990a,b) claims that clitic placement, including P2, does not require any special explanations, but can be accounted for by general syntactic processes. However, Nevis's definition of 'clitic' is overly narrow, being in effect limited to quasi-affixal elements. While such a definition is possible, it is very different from the traditional definition of clitics. In fact, when clitics become quasi-affixal, the question arises as to whether they still are clitics or rather have been reinterpreted as affixes.

Moreover, as I have demonstrated in this paper, the P2 of Vedic, early Romance, Serbo-Croatian, and Pashto cannot be accounted for in purely syntactic terms. Finally, in Vedic at least, the elements placed into P2 include both clitics and accented particles.

In the following I show that phonologically-defined P2 can be motivated for clitics if we retain the traditional definition of clitic and that the Vedic pattern of P2 non-clitic particles can in principle be explained as a secondary extension of the clitic P2 pattern.

5.1.1. Clitics are phonologically defined

The traditional definition of clitics significantly is largely phonological, a point which suggests that clitics are fundamentally a phonological phenomenon (even if through secondary developments their behavior may — in some languages — have to be accounted for in the syntax):

- Clitics have no accent and cannot be uttered by themselves. Rather, they require a host to 'lean on' (hence the term 'clitic', from Gk. *klinō* 'lean'). True, clitics may have accented counterparts that can be uttered by themselves, such as Engl. *n't* beside *not*. But this very fact shows that clitics are phonologically quite different from non-enclitic forms.

- Because they need an accented host to lean on, clitics may be attached to elements with which they are not necessarily closely connected semantically or syntactically. For instance, Sanskrit clitic *ca* 'and', used as a sentence coordinator, at-

taches to the first accented element in the clause, no matter what the syntactic status of that element; cf. (37). Similarly, the English clitic *'s* (corresponding to accented *is* or *has*) attaches to preceding NPs, no matter what their syntactic status, rather than to the remainder of the verb with which it is more closely connected semantically, cf. (38).[18]

(37) (... yò 'smā̀n dvéṣṭi) yáṁ **ca** vayáṁ dviṣmáḥ
(ŚB 1.2.4.16 and elsewhere)
'(... whom we hate) and who hates us.'

(38) a. Who's he trying to fool?
b. The king of England's come to see us.

• Clitics tend to be sensitive to phonological phrasing. Thus, trivially, enclitics (which require a preceding host) cannot occur at the beginning of an utterance; cf. (37'). A less trivial example is the fact that if a phonological break (↑) is inserted in (38b) after *England*, clitic *'s* becomes unacceptable; cf. (38').

(37') *... **ca** yáṁ vayáṁ dviṣmáḥ

(38') *The king of England ↑ 's come to see us.
√The king of England ↑ has come to see us.

5.1.2. The question of 'sentential' clitics

If a clitic 'looks' for a phonological host, no problems arise if the constituent in which they originate contains an accented element. In that case, the accented element will naturally be the host. In fact, as Radanović-Kocić (1988) observes, early Slavic pronominal clitics follow this pattern, in being attached to the verb, the head of the VP in which they originate. Similarly, if Vedic clitic pronouns and other P2 elements do not move into the initial strings, they remain within the VP; cf. especially Hale 1987. Finally, as observed earlier, Wanner (1985) finds that the ancestors of the Romance clitics tend to appear in two positions in late Latin: P2 and the VP.

For some elements, however, such as question particles, it is not at all clear whether they originate in a particular constituent and if so, what that constituent might be. Rather, they can be argued to be 'properties' of the entire clause. And since clauses may contain any number of accented elements, the question arises which of these should serve as the host. Kaisse (1982:12) claims that in such cases, only the first non-clitic element of the clause can serve as host. Moreover, she argues that other, non-sentential clitics may occur in second position only if the language also has sentential clitics.

While Kaisse's account agrees well with Serbo-Croatian, where sentential clitics appear earlier in P2 than other clitics, it fails to explain the early Romance situation, with P2 clitic pronouns, but no P2

sentential particles; cf. Radanović-Kocić 1988. Moreover, Nevis (1986, 1990a,b) correctly notes that there are languages with 'sentential' clitics, such as question particles, placed next to the verb, not in P2.

In spite of these difficulties, the notion 'sentential' clitic has a certain intuitive appeal: The set of clitic elements which cross-linguistically tend to be placed in P2 is not open-ended. It consists of sentential particles (such as question markers), auxiliaries and modals, and pronominals. Of these, sentential particles and auxiliaries/modals, wherever they may be considered to originate, pragmatically have SENTENCE SCOPE, modifying the modality, tense, etc. of the entire proposition. True, pragmatic properties like these may not be relevant in an autonomous syntax. However, they can certainly be relevant in PF, the component in which P2 originates according to the present hypothesis.

As for pronominal clitics, they may be part of the VP (if they are objects), but at the same time they are complete phrases in their own right. In fact, functionally they are major constituents of the clause. Moreover, if there is no other element in their own noun phrase, they lack a natural phrasal host to attach to within that phrase.

Especially interesting in this regard is that, as Garrett (1990) shows, the elaborate initial strings of early Anatolian accommodate object pronoun clitics, which constitute entire NPs, but possessive clitics, which syntactically are phrases WITHIN NPs (or PPs), stay next to their phrasal host. Only in later Anatolian do possessives likewise move into the initial strings, presumably on the analogy of the other pronoun clitics.

What seems to be relevant here is that the VP is less of a barrier to movement than, say, NPs. For instance, English, German, and Hindi all can move NPs out of the VP, as in (39a), (40a,b), and (41a,b). However, neither English nor German find it easy to extract possessives out of NPs or PPs; cf. (39b) and (40c) which are acceptable only in 'afterthought' readings. And while languages like Hindi can do so quite freely (41c) and not only with afterthought readings, the fact remains that movement out of an NP or PP cross-linguistically seems to be more difficult than out of a VP. This fact makes it possible to assume that clitics within the VP that are phrases in their own right or have sentence scope are relatively easily redefined as having the sentence, rather than the VP, as their domain. In this regard it is probably significant that Slavic pronominal object clitics originally were VP clitics and only secondarily became P2 clitics in Serbo-Croatian, that the early Romance P2 clitics go back to a later Latin pattern with option between P2 and VP position, and that the P2 elements of Vedic likewise exhibit variation between P2 and VP placement. These facts support the view that for pronominal clitics, P2 requires a special development of 'liberation' from the VP.

(39) a. **That person** I have not seen.
b. *She has given me the pen (t) quickly **of that man**.

(40) a. **Den Menschen** habe ich nicht gesehen.
that person have I not seen
'That person I haven't seen.'
b. Ich habe nicht gesehen **den Menschen** (der ...)
I have not seen the person (who ...)
d. *Sie hat mir die Feder (t) gegeben **des Mannes**
She has me the pen given of that man
'She has given me the pen of that man.'

(41) a. **us vyakti ko** maiṁ-ne nahĩṁ dekhā hai
that person I (ergative) neg. seen Aux.
'That person I have not seen.'
b. maiṁ-ne nahĩṁ dekhā hai **us vyakti ko**
I (ergative) neg. seen Aux. that person
c. us-ne kalam dī hai **us ādmī kī**
she (ergative) pen given Aux. of that man
'She has given me the pen of that man.'

5.1.3. P2 as attachment to Topic and the role of accent

Accepting, then, that the notion 'sentential' clitics may be relevant in PF and may include object pronoun clitics, why should these clitics tend to move to P2? Kaisse's account merely puts a label on the phenomenon, but does not explain it. Similarly, Steele (1977) simply accepts P2 as a fact, stating that to ask 'why second position?' might be just as meaningless as asking 'why adjectives?'

In her 1976 paper, however, Steele entertains the notion that P2 may be a consequence of the fact that the first element in the clause is semantically most prominent or emphatic and as such could serve as clitic host. With the following additional arguments, this claim, I believe, provides the best explanation for P2.

The fact that clause-initial position commonly houses emphasized elements was recognized among Indo-Europeanists as early as the nineteenth century; cf. e.g. Delbrück 1878. This 'emphatic' conceptualization of first position needs to be supplemented by the Praguian notion of 'Topic-Comment' structure, introduced into general linguistics by Mathesius (1928),[19] a type of discourse organization whose initial Topic is not necessarily emphatic.

However, although Topics do not always receive extra stress or accent, they can be counted on to be accented. Moreover, since they occur in a constant, clearly identifiable position in the clause, they provide a more RELIABLE ACCENTED HOST for a sentential clitic looking for a host than other constituents whose presence or placement within the clause is open to considerable variation.

Significantly, all the languages with P2 that I am aware of are 'topic-prominent' (or were so at the time that P2 originated); i.e., they have a strong tendency to place topicalized elements, often different from subjects, into the first position of the clause. This makes it possible to claim that P2 originates when 'sentential' clitics (in the larger sense), looking for an accented host, attach themselves in PF to the initial, accented Topic.

However, the fact that breaks in the prosodic structure can lead to a 'delayed' placement of P2 elements, as in Vedic, early Romance, and Serbo-Croatian suggests that an approach that operates exclusively with the notion 'accented Topic' will not be sufficient. Similar problems arise from the fact that Serbo-Croatian accented coordinating conjunctions can serve as hosts for P2 clitics and that in Pashto, accented prefixes or even accented initial syllables may do the same.

At the same time, Topic does play a role in the majority of the P2 structures and, in terms of actual use, in the majority of utterances. For instance, in Serbo-Croatian, only structures with accented initial coordinating conjunctions do not involve Topic. Elsewhere, the notion Topic is relevant, not only in structures with P2 directly after Topic (or after the first word of Topic), but even in constructions with 'delayed' P2, since the first constituent of these structures is the first accented element after the initial Topic which forms a prosodic phrase with the rest of the clause.[20] It goes without saying that this 'prosodic' conditioning of clitic placement makes eminent sense if we accept that P2 is, at least in origin, a phonological, not a syntactic phenomenon, involving a 'sentential' clitic looking for a phonologically acceptable host.

The situation appears to be similar in Pashto structures with delayed P2 (cf. (28) above) and is at least arguably the same in the Vedic and early Romance constructions with P2 elements following the first accented word after a poetic line break.

In fact, even the Pashto structures with P2 after accented prefixes and the initial accented *á-* of certain verbs may be historically explained as originally involving accented elements placed in Topic. This explanation requires the following assumptions:

(i) The initial *a-* of the relevant verbs originally was a prefix. (Compare Tegey 1977 with references.)

(ii) All prefixes of verbs with alternating accent originally were separate words which were later univerbated with the verbs into single lexical units. (For parallels see the general tendency toward univerbation in early Indo-European; cf. e.g. Hock 1986 (1991):328, 336-341.)

(iii) Somewhere along the way, accent variation between prefix (or prefix-to-be) and verb was introduced, yielding the patterns ac-

cented prefix + unaccented verb (Ṕ + V̀) vs. unaccented prefix + accented verb (P̀ + V́)

(iv) Univerbation took place earlier in P̀ + V́. (This has a close parallel in Vedic; cf. e.g. Delbrück 1888:44-46.)

(v) P2 placement reflects a stage when univerbation had taken place in P̀ + V̀, but not yet in Ṕ + V̀. As a consequence, P̀ + V́ would be placed into Topic as a single unit, to be followed by P2 clitics. By contrast, the Ṕ of Ṕ + V̀ would still act as a separate word, move into Topic by itself, and host the P2 clitics.

5.1.4. Further extensions of the P2 pattern

While at least historically, the notion 'accented Topic' thus plays a significant role in P2 placement, the fact that Topics occur on the left periphery of the clause could give rise to secondary generalizations. One of these is the fact that in early Romance, as well as generally in Serbo-Croatian, subordinating conjunctions, i.e. 'Comp' words, may host clitics; cf. (42a,b) and (43a). In early Romance, they may be optionally followed or preceded by Topics (cf. e.g. (42c,d)), while Serbo-Croatian shows some variation between post-conjunction and 'delayed' P2 placement (cf. (43b,c) and Radanović-Kocić 1988:99-101).

(42) a. que **vos** he servido (El Cid 73; Old Spanish)
Comp. you have served
'... that I have served you.'

b. que **li** tramist li reis de Suatilie
Comp. him sent the king of Suatille
(Roland 90; Old French)
'... which the king of Suatille had sent him.'

c. e aquel que **ge la** diesse (El Cid 26)
Topic Comp. him it give
'And that he should also give it to him.'

d. qu' el faldestoed s' es Marsilies asis
Comp. Topic refl. Aux. M. sit
'... that Marsile sat down on his throne.'

(43) a. (hoću) da **ti** dam knjigu
Comp. you give book
'(I want) that I give you a book.' = 'I want to give you a book.'

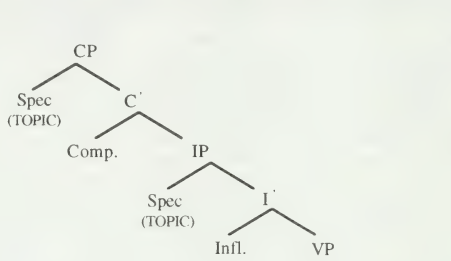
b. (Raduj se) jer **ti je** došao brat
Comp. you is come brother
'(Rejoice) because your brother has come.'

c. (Raduj se) jer brat **ti je** došao
Comp. brother you is come
'(Rejoice) because your brother has come.'

The fact that Comp elements can count as clause-initial elements for P2 placement finds a ready explanation in the Principles & Para-

meters approach, since like Topics, Comp words occur in left-peripheral structural nodes of the type (44), where either Spec of CP or Spec of IP. may serve as the landing site for topicalized elements. We would simply be dealing with an extension of 'first position' from Comp. to one of the immediately neighboring left-peripheral landing sites.

(44)



It is more difficult to give a syntactically motivated explanation for the fact that even coordinating conjunctions can host P2 clitics in Serbo-Croatian, provided that they are accented. Coordinating conjunctions are not considered Comp words. In many languages, they do in fact behave quite differently. Thus, in early Romance they are ordinarily 'invisible' for the purpose of P2 placement; cf. (45). The Serbo-Croatian situation in (20b) (and occasional early Romance parallels), then, must be explained, not in syntactic terms, but as generalization in terms of a more vaguely defined notion of 'left peripherality'.

(45) a. e nós **vos** ayuderemos (El Cid 143)
and we you will help
'... and we will help you ...'

b. ...e pur seignur **le** tenez (Roland 364)
and as lord him keep
'... and keep him as (your) lord.'

A different kind of complication arises from the fact that Vedic P2 elements include accented particles, and even accented pronouns. Three different historical explanations are possible:

One is that these elements acquired accentuation in an alternating accent pattern of the type (46); cf. Hock 1982b. However, this explanation requires the assumption that their accentuation subsequently was reinterpreted as underlying, rather than assigned by

phonological rule. Synchronically they are accented no matter what precedes or follows; cf. e.g. (13b) above.

(46) (NEXUS) X́/D́ P P E ... → (NEXUS) X́/D́ P Ṕ E ...

An alternative historical account would consider their placement secondary, following the analogy of unaccented, clitic particles with which they agree in having sentence scope. Support for this account may be the following: Whereas in the Rig-Veda, *nū́/nú* 'now' may be both clause-initial or in position 3 of the template in (12), in the later Vedic Prose period it is limited to the latter position. This situation could be explained by assuming that the particle originated as a clause-initial element and moved to position 3 secondarily.

The best account may be the following, anticipated in part by Hock 1982b and Hale 1987: Accented particles of the type *nū́/nú* originally were fronted to the Topic position, just like the accented pronominals (demonstrative *tád, etád*, relative *yád*, and interrogative *kím*), as well as finite verbs. Vedic (or its forerunner), however, permitted fronting not only of accented particles, accented pronominals, and finite verbs, but also of topicalized NPs or PPs.[21] At the same time, only ONE of the fronted elements was allowed in absolute initial position, with preference given to topicalized NPs or PPs. Other accented fronted elements then were pushed farther to the right. At an early stage they moved to the right of clitic particles, into position 3. This accounts for the variability in the position of Rig-Vedic *nū́/nú*. It also explains the fact that in the Rig-Veda, accented pronominals occur in position 1 if there is no topicalized NP or PP, but ordinarily in position 3 if there is. In addition, it accounts for the placement of the finite verb in position 3 in the archaic type *sá ha ̲ uvāca gā́rgyaḥ*; cf. Hock 1982b. At a later stage, perhaps after clitic pronouns came to be (optional) P2 elements, accented pronominals, if pushed out of position 1 by a topicalized NP or PP, moved to the right of the clitic pronouns, into position 5. Traces of this new placement can be observed in the Rig-Veda;[22] by the time of Vedic Prose it has become obligatory.[23]

Whatever the historical explanation, the fact that P2 is limited to clitics in the other three languages examined in this paper (and in many other languages around the world) suggests that the P2 of accented elements in Vedic[24] is a secondary phenomenon. At the same time, the fact that P2 has been generalized to accented elements is significant in light of the fact that P2 placement still has to be accounted for in PF. This suggests that at least synchronically phonological accounts are not necessarily restricted to clitics but may have to be invoked even for the placement of non-clitic, accented elements.

5.2. How P2 placement in PF?

Although there are complications, the questions of whether P2 placement must be accounted for in PF for some languages and why it may arise as a phonological phenomenon are relatively easy to answer. Much more difficult is the question of HOW P2 is to be accounted for in the PF of a synchronic grammar. The attempt at answering this question below must be considered quite preliminary and programmatic.

The major difficulty lies in the fact that very little work has been done so far in this regard. The solutions offered, therefore, have not been tested and, in fact, often are rather piecemeal. Zec and Inkelas, for instance, offer the formalism in (47) which 'encodes the fact that the unit [clitics] subcategorize for is the phonological [i.e. accent-bearing] word [plus clitic extensions].' (369) But this formalism says nothing about the fact that the 'phonological word' in question must be in first position within the clause or prosodic phrase in Serbo-Croatian, not to mention the different complications regarding the host for P2 clitics in the other languages examined in this paper.

(47) je: [[ ]ω ___]ω

It is doubtful that a single formalism can account for P2 placement in all of the languages examined, for the conditions on what constitutes the host for P2 elements differ considerably. However, given the discussion above, something like 'left-peripherality' (also as a point of reference for 'delayed' P2), as well as accent and prosodic phrasing, must play a prominent role. For some languages, such as Pashto, additional, more idiosyncratic information may be required, such as 'accented prefix' of a clause-initial verb or even accented first syllable of a particular subset of verbs if they are placed in first position.

Any such formalization, however, only defines the TARGET of P2 placement. In addition, we clearly need a TRIGGER, viz. a feature or set of features on the P2 elements, specifying that they are 'sentential' clitics (or in the case of non-clitics, 'sentential' P2 elements) and also indicating whether they are so obligatorily or optionally.

Given features like these it is possible to find at least a parallel to the notion that P2 elements do not remain 'in situ', but are MOVED or PLACED BY RULE into a TEMPLATE after a host defined in such terms as peripherality, accent, and prosodic phrasing. This parallel consists in Halle's recently developed framework of 'Distributed Morphology' (1990, To Appear), whose major components are post-syntactic.

The specific point of comparison lies in the fact that Halle's conceptualization includes the notion that morphology can take elements in the output of the syntax and rearrange their linear order so as to satisfy the TEMPLATES of inflectional morphology. Thus, the well-

known English syntactic output {sg. 3 pres. + have en + go}[25] is rearranged in the morphology to *has gone* because {sg. 3 pres.} and *en* are inflectional suffixes that must be attached to a verb stem and therefore move down to the next verb on the right, respectively.

Halle's movement proposal is governed by what may be called the MORPHOLOGICAL IMPERATIVE, viz. that suffixes must be attached to stems.[26] In the same spirit, I would like to propose that P2 movement is governed by a 'P2 IMPERATIVE', which requires certain elements to attach to a 'first-position' (or P1) element whose nature is determined by such features as peripherality, accent, and prosodic phrasing.

Beyond the fact that both Halle's approach and the P2 account of this paper involve movement into a position determined by the nature of the element that is being moved, there are several other points of similarity. One is that both assume an essentially post-syntactic component, because in both approaches, non-syntactic criteria motivate a reordering of elements. Another point of contact is the fact that the data which both approaches deal with tend to require templatic accounts.

However, there are differences as well. Probably the most significant is that Halle's approach operates with clearly distinct components such as 'Word Synthesis' (which is responsible for morpheme movement), 'Morphophonology', and 'Phonology'. As shown in §4.3, Pashto requires that clitic placement (i.e. movement) be ordered between the two phonological rules of coalescence and incorporation. This suggests that P2 clitic placement cannot be accounted for in a component that is distinct from the relevant phonological component. (This difference between the two approaches is reminiscent of the controversy over whether there is a clear distinction between lexical and post-lexical phonology; cf. e.g. Kaisse 1990, Hayes 1990 vs. Odden 1990b, as well as Hualde and Elordieta 1992.)

Beyond these very general ideas, it is difficult to say anything more about the question of how P2 clitics are to be accounted for in PF. Clearly, a great deal of additional research, argumentation, and disputation is required.

6. Phonological motivations for P1 elements?

Besides movement of inflexional suffixes to verb stems, Halle (1990, To Appear) postulates another, even more 'radical' process for English, viz. the INSERTION of the verb stem *do* in configurations of the type {Tense + Neg. + work}, where movement of the Tense suffix to the verb stem *work* is blocked by the intervening negation. The insertion of the dummy element *do* introduces a verb stem to which the Tense suffix can attach, and as a consequence the morphological imperative[27] is satisfied. It is through this process, then, that Halle

derives structures of the type *(They) do not work (in Boston)* or *(That person) does not work (in Boston)*. In Halle To Appear he defends his proposal against criticism by Pullum and Zwicky (1991), even for cases like *(They) do not work (in Boston)* in which the Tense morpheme that he postulates is realized as Ø.

As the reaction by Pullum and Zwicky shows, Halle's proposal is not uncontroversial. Interestingly, however, the notion of dummy insertion has parallels in P1 elements of Serbo-Croatian and German which, like P2 placement, are generally considered syntactic but on closer examination can be argued to be motivated by PF.

While the arguments in favor of a phonological account for these P1 elements clearly are more speculative than the earlier ones for P2, the approach can be considered fruitful in so far as it provides a better, more plausible explanation for certain colloquial German structures than purely syntactic accounts.

6.1. Serbo-Croatian *da* and *je*

One of the parallels to Halle's morphological dummy insertion has been proposed in Radanović-Kocić's pioneering study of Serbo-Croatian clitics (1988:49, 119-120). The facts are briefly as follows: The use of the Serbo-Croatian clitic yes/no question marker *li* ordinarily is accompanied by verb fronting, as in (48a); and the fronted verb readily serves as host for the clitic. Verb fronting, however, is not obligatory. The question, then, arises as to what happens if the verb is not fronted. Now, in the standard language we get constructions of the type (48b), where the question particle *li* is preceded by *da*, the general complementizer of Serbo-Croatian.

(48) a. Piše **li** on?
write Q he
'Does he write?'

b. Da **li** on piše
Comp. Q he write
'Does he write?'

Browne (1974) claims that the combination *dali* in such structures is the non-clitic counterpart of *li* and is used here because enclitic *li* cannot occur at the beginning of the clause. Compare the ungrammaticality of (48c) below. However, as Radanović-Kocić notes, the colloquial language offers an alternative to (48b), viz. (48d) with *je* preceding the clitic. Now, *je* literally is the third person singular present of the verb 'to be'; but in this context it is not used in its literal meaning, as can be seen from the fact that it it is invariable, not exhibiting agreement with following subjects, in contrast to the following verb which does show agreement; cf. e.g. (48e). Moreover, *je* does not exhibit tense or mood variation; cf. (48f). Put differently,

je is not employed as a verb but has taken on the same functions as *da*.

(48) c. ***li** on piše
Q he write
d. Je **li** on piše
"is" Q he write
'Does he write?'
e. Je/da **li** **su** oni studenti?
"is"/Comp. Q are they student
'Are they students?'
f. Je/da **li** **će** **mi** doći radost?
"is"/Comp. Q fut. me come happiness
'Will happiness come to me?'

Now, it is unlikely that *li* has two non-clitic counterparts, *dali* AND *jeli*. Radanović-Kocić instead reaches the following conclusion:

> 'Since the feature [+ clitic] plays no rule in the syntax, such structures [as (48c)] would be perfectly acceptable at the syntactic level. At the phonological level, however, clitics cannot stand at the beginning of an intonational unit. A dummy element *da* (or *je*) therefore is inserted in the initial position in order to provide a host for the clitic *li*. These structures now obey the clitic-second principle and are well-formed at the phonological level.' (120)

That is, if Radanović-Kocić's argument is correct, *da* and *je* are INSERTED in PHONOLOGICAL FORM in order to satisfy what I have called the P2 imperative, by providing a P1 host for clitic *li* to attach to.

Note that if *da* and *je* are accepted as 'phonological dummy P1 elements', this has significant repercussions for the way in which Serbo-Croatian P2 clitic placement is to be accounted for. We may either have to reformulate and considerably complicate the clitic placement rule of (22) above (informally revised in §5.1.3). Or we have to assume, as Radanović-Kocić apparently does, that *li* is generated by the syntax in a left-peripheral position and simply requires an accent-bearing element (Topic, or Topic + prosodic break + another accented element) to precede it. In that case, P2 movement of *li* would in effect be vacuous.

At this point I am not prepared to choose between these two alternatives.

6.2. German *es*

The syntactic status of the pronoun *es* appearing in initial, prefinite verb position in German 'impersonal passive' structures of the type (49) has received a variety of different accounts. Many scholars, especially those subscribing to the 'orthodox' version of Relational Grammar (cf. Perlmutter 1978, Perlmutter & Postal 1984) have

argued that *es* is a 'dummy subject'. Their analysis is motived by the following considerations: (i) Initial, pre-finite verb position is identified as subject position. (ii) All well-formed sentences are believed to require subjects in the final stage of the syntax. (iii) German verb agreement marking is controlled by subjects. The third person singular marking of the verb in (49) therefore requires a third person singular subject antecedent. (iv) If we do not consider *es* the subject of (49), the sentence would violate the requirement that all sentences have subjects, since there is no other NP that could function as subject. Moreover, the third person singular marking of the verb would lack a proper antecedent with which it can agree. (v) Considering *es* the subject will solve all of these problems: It is a third person singular pronoun and therefore can be the antecedent for third person singular verb agreement. Being interpretable as nominative, it can be the subject of the sentence and therefore satisfy the requirement that all sentences have subjects. In recent versions of transformational syntax, a similar concept has been invoked, namely the so-called expletive; cf. e.g. Safir 1985.

(49) Es wird (hier) getanzt
it Aux. here dance
"It is being danced (here)."
= 'There is dancing going on (here).'

Both approaches have received well-deserved criticism; cf. e.g. Comrie 1977, Fagan 1984, Hoeing 1991, and Moorcroft 1991 (see also Breckenridge 1975).

The most important counterargument to interpreting the *es* of structures like (49) as a subject or expletive can be briefly summarized as follows. The *es* of (49) differs from genuine dummy subjects or expletives, such as the *es* 'it' subject of weather verbs, by being confined to the initial, Topic position of main clauses. It cannot appear in main clauses that have other elements in Topic position, nor does it occur in dependent clauses. Compare the main-clause examples in (50)/(50') and the dependent-clause examples in (51)/(51'). Moreover, 'dummy *es*' is not confined to impersonal passives and weather-verb structures; it also is found in 'personal' passives, as well as in actives, where again it is confined to the initial, Topic position. And again, if another element is placed into Topic position, *es* cannot be used. Compare (52) and (53).

(50) a. Es wird (hier) getanzt
it Aux. (here) dance
'There is dancing going on (here).'
b. Hier wird Ø/*es getanzt
'There is dancing going on here.'

(50') a. Es wird heute regnen
it Aux. today rain
'It will rain today.'
b. Heute wird es/*Ø regnen
'Today it will rain.'

(51) Er sagt, daß Ø/*es hier getanzt wird
He says that it here dance Aux.
'He says that there is dancing going on here.'

(51') Er sagt, daß es/*Ø heute regnen wird
He says that it today rain Aux.
'He says that it will rain today.'

(52) a. Es werden hier Bücher gelesen
it Aux. here books read
"It are books being read here."
= 'Books are being read here.'
b. Hier werden Ø/*es Bücher gelesen
'Here books are being read.'
c. Bücher werden Ø/*es hier gelesen
'Books are being read here.'
d. Er sagt, daß Ø/*es hier Bücher gelesen werden
'He says that books are being read here.'

(53) a. Es kommen heute noch viele Leute
it come today in addition many people
'Many more people (will) come today.'
b. Heute kommen Ø/*es noch viele Leute
'Today, many more people will come.'
c. Viele Leute kommen Ø/*es noch heute
'Many more people will come today.'
d. Er sagt, daß Ø/*es heute noch viele Leute kommen
'He says that many more people will come today.'

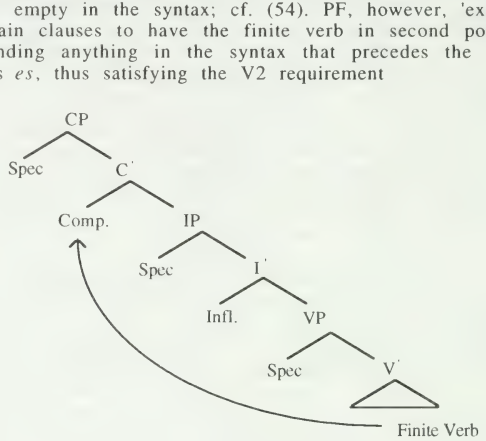
The proper conclusion, therefore, seems to be that the initial *es* of (49), as well as of (52a) and (53a), is a 'dummy Topic' (e.g. Moorcroft 1991), not a dummy subject or expletive. (The third person singular verb agreement, then, must be accounted for as 'default agreement', motivated by the morphological imperative that finite verbs be inflected for person and number. Cf. Hock In Press b for a Sanskrit parallel.)

Now, if *es* is in fact a dummy Topic, we must ask ourselves in what component of the grammar, and for what reasons, *es* is inserted into the initial Topic position. After surveying various proposed and possible syntactic accounts, Hoeing (1991:98) concludes that the presence of *es* cannot be motivated syntactically, which 'leaves insertion

at PF — plausibly enough, since [it is] only needed to satisfy certain surface structural requirements left unsatisfied by the syntax.'

If I interpret Hoeing correctly, he would claim that the syntax is perfectly capable (as probably it should be) to generate main clauses without anything in the initial Topic position (the Spec of CP) and to place the finite verb in the post-Topic position (in standard accounts of German syntax identified as the Comp. position), even if the Spec of CP is left empty in the syntax; cf. (54). PF, however, 'expects' declarative main clauses to have the finite verb in second position (V2). Not finding anything in the syntax that precedes the finite verb, it inserts *es*, thus satisfying the V2 requirement

(54)



	Ø	wird	getanzt
PF:	**es**	wird	getanzt

Hoeing's proposal is certainly 'unorthodox', and many linguists may question its justification. However, there is some evidence which seems to support it.

There is a well-known phenomenon of 'Topic deletion' in colloquial German which permits the 'deletion' from the Topic position of highly referential elements, whose identity can be recovered from the pragmatic context. Compare the examples in (55). Note that being colloquial, the structures in (55) exhibit inflectional forms that differ from the formal standard. Moreover, they commonly employ particles that are difficult to gloss in English. (In the word-by-word glosses, these particles are simply characterized as Part.)

(55) a. **Ø** machen wir
= das machen wir
that do we
'We'll do that.'

b. Ø komm schon
= ich komme schon
I come Part.
'I'm coming!'

Interestingly, in the same variety of German, initial, dummy Topic *es* may be missing; cf. (56).

(55) a. Ø kommt da doch so'n Kerl rein
(und fängt an zu brüllen)
= Es kommt da doch so ein Kerl (he)rein
it come Part. Part. such a guy in
(und fängt an zu brüllen)
'A guy comes in (and begins to shout).'

b. Ø wird hier doch schon wieder getanzt
= Es wird hier doch schon wieder getanzt
it Aux. here Part. again dance
'Again people are dancing here.'

Now, unlike the Topics of structures like (54), the 'missing' *es* of (55) is anything but highly referential or recoverable from the pragmatic context. In fact, pragmatically it is about the least referential thing imaginable. If *es* were indeed a syntactically introduced (dummy) Topic, then colloquial Topic deletion would have to be formulated to take place either if the Topic is highly referential or if it is not referential at all — a very strange generalization indeed!

Assuming dummy Topic *es* to be inserted in PF avoids this difficulty: Since in this colloquial variety, structures of the type (54), without anything in Topic and with the verb in initial position, are acceptable in declarative main clauses, there is no motivation for PF dummy *es* insertion in the type (55). Only the type (54), therefore, needs to be accounted for by a rule of Topic deletion, and that rule can now be formulated sensibly, as requiring the element in Topic to be highly referential.[28]

7. Conclusions and outlook

In this paper I have presented evidence that certain phenomena which have been considered syntactic are instead matters of PF.

This conclusion is probably least controversial as regards allegedly syntactically conditioned differences in Vedic Sanskrit finite verb accentuation and the similar phenomenon of 'pluti'.

I also have shown that the P2 placement of clitic elements in four Indo-European languages (or groups) must be accounted for in a post-syntactic PF. Although the precise mechanism still needs to be worked out, I have suggested that P2 placement is similar to suffix movement in Halle's framework of Distributed Morphology (1990, To Appear). Criteria for P2 placement include the notion Topic, accent, as well as phonological phrasing.

Serbo-Croatian also permits clitic placement in reference to (accented) coordinating conjunctions, a fact which requires replacing Topic by the more vaguely defined notion of left peripherality. Pashto requires additional, more specific morphological and phonological information. And Vedic has extended P2 to non-clitic elements. These phenomena can be historically explained as resulting from secondary developments. The synchronic result in Vedic is a grammar in which even the P2 placement of accented elements must be accounted for in PF.

Finally, I have presented arguments that PF may be responsible not only for the placement (or movement) of elements within the clause, but also for insertion. While these arguments clearly are more speculative, the PF account for German clause-initial, dummy Topic *es* has proved fruitful in that it makes possible a more plausible account of colloquial German 'Topic deletion' than a purely syntactic one.

An issue that I have not raised in the present paper, although it can be argued to be closely related to P2 placement, is the verb-second (or V2) constraint of early Germanic, many modern Germanic languages, Romance, Slavic, Baltic, Kashmiri, and many other languages. In an early paper (Hock 1982a) I argued that V2 originated as P2 placement of clitic auxiliaries. That claim has been criticized most recently by Nevis (1990b). I intend to address this issue in fuller detail elsewhere. (For the time being, see Hock MSa.) At this point, suffice it to note that the hypothesis that V2 originates in PF proves itself useful, by providing a more plausible and motivated explanation for the fact that early Germanic dependent clauses lag behind main clauses in the shift toward V2.[29]

NOTES

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[1] This account, of course, assumes that at least the post-lexical component of the phonology is ordered after the syntax.

[2] For further discussion of Hettrich's treatment of this and similar structures see Hock 1990 and MS b.

[3] Thus, both *bhrā́tar-* 'brother' (sg. Nom. *bhrā́tā*), with underlying initial accent, and *pitár-* 'father' (sg. Nom. *pitā́* etc.), with underlying non-initial accent, have initially accentuated vocatives in 'accenting' contexts, and unaccented vocatives elsewhere: cf. *bhrā́tar*, *pítar* beside *bhrātar*, *pitar*.

[4] However, this account leaves unexplained the lack of accentuation in 'non-accenting' contexts, which would require an accent deletion very similar to that of finite verbs in 'non-accenting' contexts.

[5] Thus, initial finite verbs exhibit the same accent differences as their non-finite counterparts (which are accented in all syntactic contexts). Thus *bhárati* 'carries' has initial accent just like the present participle *bhárat-* 'carrying', whereas *tudáti* 'pushes' has suffix accent just like the present participle *tudát-* 'pushing'.

[6] Traditionally, the phenomenon in (6) is accounted for by claiming that line-initial position is treated as if it were clause-initial; cf. most recently Hale 1987. Even if we accept the claim, the wording 'as if' makes it clear that line-initial verb accentuation is not really taking place 'in the syntax'.

[7] See Hock In Press b, Klein 1991, Schäufele 1990, 1991. For a different approach, cf. Hale 1987.

[8] The latter account was actually proposed for Germanic V2. If the arguments presented in this paper are correct, it suffers from the same weaknesses as the 'filter' account for P2.

[9] This has been correctly observed by Hale (1987). However, following traditional Indo-Europeanist practice, he dealt with this as an instance of a line boundary acting as if it were a sentential boundary.

[10] This explanation casts doubts on Givón's claim (1971) that the modern pattern of placing clitics before the finite verbs (except after imperatives or non-finite verbs) reflects the OV order of Latin. Cf. Hock 1968(1991):616-617. — The later Romance restriction of the pattern verb + clitic to imperatives is an innovation, motivated no doubt by the fact that imperatives increasingly tend to be placed in initial position, a fact which made it possible to reinterpret this placement, and the concomitant post-verbal placement of the clitic, as prototypical.

[11] Earlier PF proposals for Old Spanish are discussed by Wanner (1992). However, like Wanner's own, non-PF analysis, they are stated in terms of purely syntactic parameters such as NP movement or attchment to the left margin of CP (i.e. the clause), rather than prosodic phrasing. (Similarly in Rivero 1992.)

[12] Including Vedic Sanskrit, see e.g. Hock 1982b, In Press b, Hale 1987, Klein 1991, Schäufele 1990, 1991. For a cross-linguistic perspective see Steele 1975, 1977a, 1978, as well as Kaisse 1982.

[13] Vogel and Kenesei actually address facts of Hausa; but with proper modifications, the argument would apply to the Serbo-Croatian situation as well.

[14] Radanović-Kocić (1988:160) cites medieval Serbo-Croatian examples like the following which suggest that the modern prosodic conditioning of clitic placement has long-standing antecedents. The delayed clitic placement in structures of this sort clearly must be due to the fact that the appositive phrase *Stefanǐ* ... which follows the initial subject is set off by prosodic breaks.

ě (|) Stefanǐ ... (|) oběkavaju **se** vamǐ
I Stefan promise clit. you
'I, Stefan ..., promise you ...'

[15] To keep the exposition reasonably brief, certain details are ignored, such as the behavior of lexically unprefixed verbs in the perfective or the interaction of optional accent variation in unprefixed verbs not beginning in *a-*. For these see Tegey 1977:85-87 and 88.

[16] The prefix *wə-* added to underlyingly unprefixed verbs to make perfectives exhibits the same behavior.

[17] It is commonly asserted that like their Vedic counterparts, the initial strings of Avestan may be defined not only in terms of clause-initial, but also of line-initial position; cf. e.g. Reichelt 1909. However, as Hale (1987:107-122) observes, early passages with apparent line-initial strings are amenable to alternative explanations.

[18] See also Marantz 1988, 1989.

[19] Cf. also Daneš 1974, as well as more recent publications such as Klein-Andreou 1983 and Li 1976. Praguian notions of sentence perspective have, in turn, been (re-)introduced into Indo-European linguistics, cf. e.g. Dressler 1969.

[20] This is a rewording of the rule stated in (22) above.

[21] Commonly, complex NPs or PPs front only one word, the rest of the constituent remaining stranded in a later position of the clause. See Schäufele 1990 for the syntactic implications of this 'partial' movement.

[22] This conclusion was advanced with some hesitations in Hock 1982b. Hale 1991 provides clear evidence for Rig-Vedic placement of accented pronominals in position 5.

[23] A parallel to this 'push-down' development may be found in Germanic, where at a very early stage there was multiple fronting of pronouns, short adverbials, and topicalized NPs or PPs into clause-initial position, and second-position auxiliaries (etc.) were placed after ALL of the fronted elements. In later Germanic, this pattern gave way to one in which only one element could appear in clause-initial position before the finite verb, and where other fronted elements were 'pushed down' into the position after the finite verb. Compare Hock 1985.

[24] Actually, with certain variations, the phenomenon is more widespread in early Indo-European; cf. e.g. Hock 1982b and Hale 1987. One suspects that the same explanations apply to Avestan, Greek, etc. as to Vedic. Hittite, by contrast, has a very different system of initial strings, involving (it seems) only clitic elements and frequently preceding topicalized elements.

[25] The formulation given here is approximate. The example comes from the version of Halle To Appear that was presented at the 1991 conference on phonology at the University of Illinois.

[26] Similarly, I invoke (Hock In Press) a morphological imperative to account for default agreement marking in Sanskrit, a language which requires inflectable stems, including verbs, to be inflected, even if there is no syntactic antecedent to determine the choice of verb inflection.

[27] This is my term, not Halle's.

[28] The present argument is relevant mainly within the Principles & Parameters approach. Other frameworks may be better able to deal with German 'dummy-*es*' within the syntax. This is especially true for Sadock's Autolexical Syntax (1991, see also 1990). Even the latter approach, however, does not seem to be geared to account for the Serbo-Croatian PP1 phenomena, especially for the fact that the definition of P1 depends to a significant degree on phonological factors.

[29] Anderson (1992) reached me after completion of the present paper. His discussion of clitics (198-223) therefore could not be discussed in the body of the paper. Anderson claims that P2 clitics (and other 'special clitics') are 'phrasal affixes', attached to phrases by the same morphological processes that attach ordinary affixes to words. In this respect his interpretation converges with the claim of this paper that P2 clitic placement is not a syntactic phenomenon. However, Anderson considers the domain for their placement to be DETERMINED by the syntax (211), specifically, the clause (217). No mention is made of PF arguments similar to the ones of this paper. Rather, his interpretation of 'special clitics' as phrasal affixes is based on the following morphological claims: Pronominal clitics are comparable to inflectional affixes, particles, to derivational affixes. Just as 'ordinary' inflectional affixes are placed 'outside' derivational ones, so pronominal clitics are placed 'outside' the particles (i.e. farther from their host). This interpretation works for Vedic and may do so for Serbo-Croatian (if modals, auxiliaries, etc. can be considered inflectional). It fails for Pashto, where only one of the three clitic particles occurs on the 'inside'; the other two appear in final and antepenult position (slots 7 and 9 of the template in (23).

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FROM VERB TO CLITIC AND NOMINAL SUFFIX: THE SOMALI *-e, -o* NOUNS[1]

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In this paper I argue that Somali nouns ending in citation form in *-e* and *-o* contain underlying suffixes which historically developed from the clitics **-yah* (m.) and **-tah* (f.). The clitics themselves were reduced forms of the verb 'be' (*yahay* 'he is', *tahay* 'she is') and they followed the noun in a certain type of relative clause. Contemporary Somali still has similar constructions in which the reduced form of 'be' *ah* acts as a relativizer.

Due to the loss of the Cushitic feminine proto-suffix **Vt/tV* which was also one of the plural suffixes, the contrast between masculine and feminine, as well as between some singular and plural nouns, was considerably decreased. In order to mark these distinctions more overtly, the nouns followed by the clitics came to be used in other syntactic positions until they completely eliminated the non-cliticized nouns. And the original clitic has been reinterpreted as a nominal suffix.

The diachronic development sketched here helps to understand synchronic alternations of the noun vowels: phrase-final *-o/-e* vs. medial *-a*. It also explains why the underlying /k/ of masculine clitics is realized as [g] after all vowels (by a general rule of intervocalic voicing) but not after *-e* and *-o* nouns, in which case intervocalic *-h-* appears.

0. The problem and earlier accounts

Somali nouns ending in the citation form in *-e* and *-o* represent a problem for the morphophonology of the language for two reasons. The first one is the final vowel alternations: *-e/-o* phrase-finally versus *-a* phrase-medially. The second problem is the apparent morphophonemic alternation of the initial consonant of masculine clitics: *-h-* after *-e*, *-o* nouns versus *-g-* after other vowel-final nouns. Before I present an outline of my proposal, I will illustrate these alternations in more detail.

Although in the citation form there is a contrast between *e*-final and *o*-final nouns, e.g. *bare* 'teacher', *dawo* 'medicine', the contrast is neutralized in phrase-medial position where *-a* appears: *bara...* 'teacher...', *dawa...* 'medicine...'. The *-a* appears also before clitics, such as definite articles, e.g. *baraha* 'the teacher', *dawada* 'the medicine'; demonstratives, e.g. *barahaas* 'that teacher', *dawadaas* 'that medicine', and possessive pronouns, e.g. *barahooda* 'their teacher', *dawadooda* 'their medicine'. The initial consonant of all these clitics is a separate morpheme: a gender marker of the noun. The underlying forms of the gender markers are /k/ for masculine, which is found on the surface after most consonant-final nouns, e.g. *wiil* 'boy' — *wiilka* 'the boy'; and /t/ for feminine, e.g. *sonkor* 'sugar' — *sonkorta* 'the sugar'. The /t/ of the feminine gender marker is always realized as [d] after vowel-final nouns, as in the examples given before, as well as after *i*-final nouns, as in *mindi* 'knife' — *mindida* 'the knife'. A simple rule of intervocalic voicing of stops easily accounts for the latter realization.

The surface realizations of the underlying /k/ differ depending on the environment of the noun-final segment. It is realized as Ø after a guttural consonant, e.g. /libaax+ka/ > *libaaxa* 'the lion'; /raah+ka/ > *raaha* 'the frog'. An accurate analysis may involve two stages here: assimilation and degemination, e.g. /raah+ka/ > *raahha* > *raaha* (cf. Bell 1953). For the sake of simplicity, however, I will refer to this rule as 'post-guttural *k*-deletion'. A problem appears if a noun ends in a vowel, in which case [g] or [h] occurs in the cliticized forms, and in each case intervocalically. Ignoring the backed/fronted vowel contrast,[2] which is irrelevant for the problem discussed here, vowel the inventory in Somali consists of five short vowels {i, u, e, o, a} and their long counterparts {ii, uu, ee, oo, aa}. Not all of these vowels may occur as a noun-final segment. Only nouns ending in *-i*, *-e*, *-o* and *-aa* are commonly found in Somali. Those ending in *-u* seem to be extremely rare: I found only one example of such a case. Other vowels do not occur noun-finally.

The *g*-variant of the clitic appears after nouns ending in *-i*, *-aa*, and *-u*; the *h*-variant appears after *e*- and *o*-final nouns:

(1)	guri	'house'	guriga	'the house'
	heesaa	'singer'	heesaaga	'the singer'
	guu	'main rains'	guugaa	'the main rains'
	bare	'teacher'	baraha	'the teacher'
	kabo	'shoes'	kabaha	'the shoes'

Most descriptions of Somali (e.g. Bell 1953, Andrzejewski 1964, Saeed 1985) simply state the complementary distribution of the two variants of the clitic according to the quality of the noun-final vowel. By doing so they reduce the problem to morphophonemic alternation

of the masculine marker /k/, in which intervocalic [h] is derived after the mid vowels /e/ and /o/, and /g/ is derived after high and low vowels. It would be difficult to account for this alternation on phonological grounds. Although a rule changing the underlying intervocalic /k/ into [h] is by no means unusual, there is no explanatory reason for restricting such a rule to the post-mid-vowel environment.

Cardona 1981 proposes a different treatment of the problem. He argues that nouns ending in *-e* and *-o* contain underlying final /-h/. In isolation the /h/ normally is not realized on the surface, although Cardona mentions, following Abraham (1964:329), occasional pronunciations of *o*-final nouns as [-oh] or [-ah]. An additional argument given by Cardona is that the final vowel in these nouns is not followed by the expected glottal closure at the end of a vocalic segment in the final position. When a *k*-initial clitic is added, the *-h* of the noun is deleted in the same manner as it is deleted after all other gutturals by the rule mentioned here earlier. I am going to support Cardona's analysis with a number of additional arguments. However, it should be noted that accepting this proposal leads to the creation of a distributional gap: There would no longer be nouns ending in the underlying vowels /-e/ and /-o/, but only in /-eh/ and /-oh/. Another question which comes to mind is also distributional in nature: Why should there be so many nouns in Somali ending in *-h*? I will address these two questions in section 1, showing that the *-h* is not a part of the noun's root but a part of a suffix.

Some authors, e.g. Lamberti 1986b, Dolgopolskii 1973, postulate a historical change of Cushitic intervocalic **-k-* into Somali *-h-* after the non-high vowels *a*, *e*, and *o*. Below are some reconstructions:

(2) ah- < *Ak/*Akk 'to be' (Dolgopolskii 1973:244)
bih- < *bAk 'to cry' "
rah < *rak 'frog' (Lamberti 1986b:)

The occurence of the *h*-form of the masculine clitics could then be treated as an instance of that historical general change. However, as has been pointed out, *-aa*-final nouns take the *g*-variant of the clitic and not the expected *-h-*. Moreover, examples such as *sheg-* 'tell' (*shegay* 'I told' etc.) reconstructed as **shek-* (Heine 1978) or *-oog* 'fire' reconstructed as **wAk* (Dolgopolskii 1973) indicate that **k > h* change could not be regular in Somali. Some Somali dialects (e.g. Jiiddu, Lamberti 1986b) show a regular change of **k > h* in less restricted environments. It is likely that the few lexical items quoted in (2) penetrated into other Somali dialects as a result of interdialectal contacts and borrowing rather than directly developing from the proto-language through regular sound change. The scarcity of evidence which is at my disposal does not allow me to favor one of

these hypotheses against the other one. However, even if the historical change of $*k > h$ is accepted, it does not exclude or contradict the claim that the h-initial masculine clitics are derived from the underlying /-h/ of the nouns.[3]

In section 1 of this paper I will propose that the underlying final /-h/ in these nouns is a part of nominal suffixes, which developed from earlier clitics. The historical development of these clitics is outlined in section 2. Plural suffixes and relic forms found in different Somali dialects provide further evidence, which will be demonstrated in section 3. Finally, section 4 is devoted to the development of the suffixes' vowels which resulted in synchronic alternations.

1. Evidence for underlying /h/

Nouns with final *-e* and *-o* constitute a large portion of the Somali vocabulary, and it would be highly improbable to find so many lexical stems ending in *-h*. In fact there is good evidence to postulate that the majority, if not all, of these nouns are composed of a lexical stem and the suffixes *-o* and *-e*, respectively. The singular suffix *-o* is a feminine gender marker. The examples in (3a) demonstrate that the suffix is not strictly defined in semantic terms. Many nouns of foreign origin, especially Arabic as in (3b), which in the source language end in *-a*, have been reinterpreted in Somali as feminine nouns in *-o*. Synchronically they are no different from the (3a) nouns. While the singular suffix *-o* is unproductive, the plural *-o* is one of the most common plural suffixes. Notice that the plurals usually 'reverse' the gender of the singular, as shown in (3c):

(3) a. xero (f.) 'corral' < xer (f.) 'herd' (Luling 1987)
tiro (f.) 'calculation' < tir-i 'to count' "
talo (f.) 'decision' < tal-i 'to decide' "
sheko (f.) 'story' < sheg 'to tell' "

b. dawo (f.) < Ar. dawaʔ (m.) 'medicine'
muddo (f.) < Ar. mudda(t) (f.) 'period of time'

c. kab (f.) - 'shoe' kabo (m.) - 'shoes'
naag (f.) - 'woman' naago (m.) - 'women'
saaxib (m.) - 'friend' saaxibbo (f.) - 'friends'
sanad (m.) - 'year' sanaddo (f.) - 'years'

Among nouns ending in *-e*, two lexical suffixes can be distinguished: the agentive suffix *-e*, as in *bare* 'teacher' from *bar* 'to teach', and the 'ownership' suffix *-le*, as in *dukaanle* 'owner of the shop' from *dukaan* 'shop'. I will show later that the *-le* suffix historically developed as a composition of the associative *la* 'with' plus the agentive *-e*.

Once final *-o* and *-e/-le* receive the status of nominal suffixes, the assumption of an underlying /h/ for these suffixes does not revolutionize the Somali lexicon. I am going to assume for the moment the underlying representations of the suffixes as /-eh/ and /-oh/, respectively. The only context in which the /h/ occurs on the surface is when *k*-initial clitics are added. As mentioned earlier, the *k*-deletion rule applies, leaving the intervocalic [h]. The possible derivation, including an additional rule of cross-guttural vowel assimilation, is illustrated in (4):

(4)	underlying	bareh+k+iisa	kaboh+k+iisa
	k-deletion	barehiisa	kabohiisa
	assimilation	barihiisa	kabihiisa
		'his teacher'	'his shoes'

In the citation form, the final /h/ of these nouns is deleted (*bare* 'teacher', *kabo* 'shoes'). It is also deleted in phrase-medial position, as shown below (note the optional change of noun-final vowel to *-a*, which will be discussed later):

(5) caano locaad (caana locaad) (Andrzejewski, 1956, p.18)
'cow's milk' (caano 'milk')

These two environments for the *h*-deletion rule and the failure of its application within the clitic group (as in 4) suggest that the rule applies at the edge of a domain larger than the phonological word but smaller than the phrase. I will refer to this domain as the 'clitic group'.

A question may be posed concerning whether all nouns ending in surface *-e* and *-o* contain these underlying suffixes or whether perhaps there are among them 'truly' vowel-final nouns. Considering the final *h*-deletion rule, the only environment in which the two kinds of nouns might exhibit the contrast is the position within the clitic group. It is expected that the /e/- and /o/-final nouns would take the *g*-variant of the masculine clitic, analogously to other vowel-final nouns. However, such cases are not reported. Hence I conclude that there are no nouns in Somali which end in the underlying vowel /-o/ or /-e/.

Recall that among other nouns ending in vowels, only those in *-aa* and *-i* are common in Somali. The fact that other vowels do not occur as a noun-final segment suggests that these two terminations may have a status of suffixes. Caney (1984) characterizes the *-aa* as an archaic derivational affix which used to indicate the performer of the activity expressed by the verb (Caney 1984:303), as seen in (6) below:

(6) heesaa 'singer' < hees 'to sing'
gabayaa 'poet' < gabay 'to compose poems'

In some of the nouns ending in *-i*, the vowel *-i* is a part of the causative suffix *-in/-is*, as in the example below:

(7) badi=badin=badis < badi (from 'Dizionario')
'great quantity' 'to increase in number'

For the majority of *i*-final nouns, however, there is no synchronic evidence that *-i* constitutes a lexical suffix, although it could have functioned as such in the past.[4] I leave this issue unresolved. Nevertheless my argument here is that nominal roots in Somali are basically consonant-final. Postulating the suffixes /-eh/ and /-oh/ (rather than noun-final /-e(h)/ and /-o(h)/) complies with this general pattern without creating a distributional gap.

The next question to pursue is the final *h*-deletion rule. If this were a simple phonological rule, there would be no words in Somali ending in [h] in citation form. This is not the case, however. Although such words are rare and mostly monosyllabic (as in 8a), some polysyllabic words are also found (as in 8b):

(8) a. rah - 'frog'
shaah - 'tea'
leh - 'who has'
sooh - 'weaving ropes'
kaah - 'bright light'

b. soddoh - 'mother in law'
amaah - 'loan, credit'
kallah - 'to leave early in the morning'
babbah - 'nothing'

The existence of these *h*-final words seems to contradict the *h*-deletion rule. Fortunately there is one among them, namely the relative pronoun *leh* 'who has' which actually provides substantial evidence for the rule in question. This pronoun occurs as an independent word in certain types of relative clauses, as in (9):

(9) nin dukaan leh (Saeed 1985:143)
man shop owning
'a man owning a shop'

Saeed notes that the same pronoun may be suffixed to the noun rendering the meaning of 'ownership'. He adds that in such a case it surfaces 'without the *h*' (Saeed 1985:143), that is as *-le*:

(10) dukaan 'shop'
dukaanle 'the owner of a shop'

Taking into account the semantic value of *leh* ('who has') and *-le* ('owner') there is no doubt that the suffixal *-le* is a reduced form of the independent pronoun *leh*. Therefore it can be argued that when

leh is cliticized to the noun, the final *-h* is deleted, not by a general phonological rule but as the result of an idiosyncratic clitic reduction process. (On clitic reduction in general see Hock 1986(1991):86.) It will be important for my further argumentation to observe that the pronoun *leh* '(who) has' is morphologically composed of the associative particle *la* 'with' and the verb *ah* '(who) is'.[5] In the following section, I will postulate that the suffixes *-o* and *-e* contain the same morpheme *-ah* '(who) is'. Consequently, the final *h*-deletion in these nouns is by no means different from the *h*-deletion in the clitic *leh*. The rule is lexically restricted to one item: the morpheme *-ah*.

2. Historical development of the *-o* and *-e* suffixes

I am going to propose that the *-o* and *-e* suffixes historically developed from the clitics **-yah* (m.) and **-tah* (f.) which had their origin in the personal forms of the verb *-ah-* 'to be'. The same verb in its contracted form *ah* (see e.g. Saeed 1985) is the relative marker, used to form periphrastic adjectival constructions, as in the example below:

(11) Nin hodon ah ayuu noqday (Saeed 1985:169)
man richman is FOC-he became
'He became a rich man'

Bell 1953 treats the above *ah* as an adjective requiring a complementary noun:

(12) nin Somali ah - 'a Somali man' (Bell 1953:78)
daar bir ah - 'an iron house' (daar 'house'; bir 'iron')
warqad ah - 'made of paper'
qorya ah - 'made of wood'

It is plausible that the same relative marker became a clitic in the way *-le* is used as a clitic of *leh*. Originally the cliticized forms carried the meaning of relativizers, too. I will show momentarily that they still occur in this function in contemporary Somali. At a later time *-o* was reinterpreted as gender or number marker, whereas *-e* with its 'agentive' function still shows close semantic relation with the relativizer 'who is'.

I assume that the original forms of the relativizers were the third person present habitual tense forms of the verb 'be'. In contemporary Somali the singular third person forms of 'be' are *yahay* (m.) and *tahay* (f.) in the full form, and I assume the same as historical reconstruction. In the plural, contemporary Somali has *yihiin* (3 m.) and *tihiin* (3 f.), respectively. I argue that in these forms the root vowel *-a-* underwent anticipatory assimilation to the *-i-* of the inflectional suffix, that is, originally they were **yahiin* (m.) and **tahiin* (f.). Note that all other forms of 'be' show similar assimilation

across the *-h-*, e.g. the negative habitual: *ihi* (1 sg.), *ihid* (2 sg.), *ihin* (2 pl.), *ihidin* (3 pl.) vs. *aha* (3 sg.). I assume that these assimilations took place later than the processes to be dealt with here. Thus the plural relativizers are reconstructed as: **yahiin* (3 m.) and **tahiin* (3 f.). The first clitic reduction which affected the relativizers was the loss of the inflectional suffixes leading to *yah* and *tah*, respectively. The independent relativizers *tah* and *yah* were further reduced to *ah*, in which form they occur in contemporary Somali, as has been shown in (11) and (12). The cliticized relative *-tah* and *-(y)ah* can be seen in relic forms in (13), in which the final *-h* has not been lost yet.

(13) ninka bukah naag buktah (Abraham 1964:35)
man the sick woman sick
'the sick man' 'a sick woman'

The next stage of the clitics' reduction was the dropping of the final *-h*. In most Somali dialects the final *-h* is deleted everywhere except for the position before demonstratives and other clitics, as mentioned in section 1. Warsama and Abraham (1951) note that in some dialects the nominal final *-o* is pronounced as *-oh* phrase-medially. It might be suggested that these dialects represent an earlier stage when the *h*-deletion applied at the phrasal level, whereas in other dialects the domain of the rule application was narrowed to the clitic group. The *h*-deletion led to the subsequent change of vowel raising in phrase final position, which will be discussed in detail in section 4. Given this change, the contemporary agentive suffixes *-e* (m.) and *-to* (f.), exemplified in (14), can be viewed as direct continuators of the earlier relative clitics.

(14) /qor/ 'to write' (Puglielli 1984:22)
qore (m.)/qorto (f.) 'the one who writes; writer'
/afuuf/ 'to blow (the fire)'
afuufe (m.)/afuufto (f.) 'the one who blows (the fire)'
/duul/ 'to fly'
duule (m.)/duulto (f.) 'the one who flies; pilot'
/qosol/ 'to laugh'
qosole (m.)/qososho (f.) 'the one who laughs'
/gurat/ 'to move, migrate (e.g. with cattle)'
gurte (m.)/gurato (f.) 'the one who migrates (with animals)'
/fiirsat/ 'to look for'
fiirsade (m.)/fiirsato (f.) 'the one who looks for'

Note in (14) the operation of other rules of Somali: *l+t > sh* (*duul+to > duusho*); syncope (*qosole > qosle*); intervocalic voicing of stops (*fiirsat+e > fiirsade*) with the simultaneous bleeding of this rule, if the intervocalic stop results from cluster simplification or degemination (*fiirsat+e > firsato /*fiirsado*). Note also that all the

nouns are given in the form in which they occur phrase-finally; in phrase-medial position the final vowel *-e* or *-o* is optionally realized as *-a*.

As noted by Puglielli (1984), in some cases the 'agentive' suffix does not indicate a performer of an action but an object, as in *cunto* 'food' < *cun* 'to eat', or an instrument, as in *fure* 'key' < *fur* 'to open'. All these slightly different semantic functions of the suffixes *-e* and *-to* are derivable from the meaning of the earlier relativizer 'who/what is'. The problem unresolved until now is the plural suffix *-o*.

As far as the form of the suffix is concerned, I will show in section 4 that the variants *-yo* and *-to*, which go back to the clitics **-yah* and **-tah*, respectively. Yet, it is not immediately obvious why the relative clitic could be reinterpreted as a plural marker. In order to answer this question, I suggest that this kind of reinterpretation is due to the previous loss of an earlier plural marker whose function was taken over by the the relative clitic. I hypothesize that the lost plural marker is the feminine proto-suffix **-tV/Vt*. Many Cushitic, as well as Semitic languages, have preserved this suffix in the function of the feminine gender marker. In a number of languages the same suffix is also utilized as a plural marker of masculine nouns (cf. Hetzron 1980). However, in Somali and in other Sam languages, we do not find overt traces of the feminine proto-suffix.[6] Perhaps the very few minimal pairs, such as Somali *boqor* 'king' vs. *boqorad* 'queen' and *bidde* 'male slave' vs. *biddad* 'female slave', are relic forms keeping the ancient proto-suffix. But it is more likely that the feminine forms of these nouns were made up by analogy to numerous Arabic loan-words borrowed into Somali together with the feminine suffix *-at* > Som. *-ad*.

Although the feminine proto-suffix is segmentally lost in Somali, its previous appearance can be predicted on the basis of the tonal patterns of certain nouns. There are a few cases of minimal pairs of words in which the tonal pattern is the only indicator of the noun's gender, with masculine nouns being high-low and feminine nouns being low-high, as in the examples in (15a) below. In addition, there are nouns in which number distinction is marked by the same tonal pattern, as in (15b).

(15) a.	ínan	'boy'		inán	'girl'
	órgi	'he-goat'		orgí	'she-goat'
b.	díbi	'bull'		dibí	'bulls'
	Cárab	'Arab person'		Caráb	'Arabs'

I argue, following Oomen 1981 and Hyman 1981, that the tonal contrasts in these cases resulted from the loss of the feminine plural

suffix. This complies with Oomen's hypothesis that originally all nouns had penultimate accent, realized as high tone (Oomen 1981:44). After the loss of the mora-bearing proto-suffix the high tone was preserved on the final vowel (final mora of long vowels). The loss of the feminine proto-suffix considerably decreased the contrast between masculine and feminine nouns, as well as the contrast between those singular and plural nouns which had the feminine proto-suffix as a plural marker. In order to express the contrast more overtly and preserve the marked status of feminine and plural nouns, the relative clitic was drawn on as a suffix denoting their gender or number marking. The suffixed nouns came to be used in other than relative clause syntactic positions, until they completely replaced the non-suffixed feminine and plural nouns. The cases cited in (15), then, represent relic forms, reflecting the stage when the ancient suffix had already been lost and the new suffix did not yet develop. It is somewhat puzzling why they did not undergo the process described here. Perhaps the answer lies in the fact that the class of these nouns is limited to a small number of nouns denoting humans and animals, whose gender is naturally assigned.

It is remarkable that in closely related Rendille and Boni, the same clitic, which I refer to as 'relative marker', occurs in the function of focus marker.[8] According to Heine and Reh (1984), the focus marker *-e* historically developed from the copula **-ahi* 'is', used in cleft constructions, and according to them, that development already took place in the Proto-Sam period. Somali did not preserve **ah* in either of these two functions,[9] compare Rendille (16), with the clitic *-e*, to Somali (17), with the new focus marker *baa*.

(16) Inam-e yimi. (Heine & Reh, 1984:165)
boy-FOC came 'The boy came.'

(17) Inan baa yimi.
boy FOC came 'A boy came.'

Taking into account the Rendille and Boni data, the following scenario of development can be proposed. In the Proto-Sam period, the verb *-ah-* 'be' underwent grammaticalization, becoming a relative clause marker. A certain type of relative clause, as in the example (12), is still found in Somali. The same *-ah-* was used in another type of relative clause, i.e. a cleft construction. This particular usage of *-ah-* led to its reinterpretation as a focus marker. In Somali, the clitic lost its function of focus marker, which was taken over by *baa* and *waa*, and, for the reasons mentioned above, was reinterpreted as a gender/plural marker.

The path of development proposed here for Somali has cross-linguistic parallels, where a word first becomes a clitic, then a suffix, and where finally the suffix is hardly recognizable as a separate

morpheme. Semantic shifts accompanying such developments are not unusual, either. Slavic adjectives provide a good example of such a case. As Vaillant (1958) points out,[7] the relative **yo-* in Balto-Slavic became a clitic marking definiteness and was postposed in this new function to adjectives and other qualifiers of the nominal phrase, as in Old Slavic in (18):

(18) novo vino - 'new wine' (Vaillant 1958:428)
novo-je vino - 'the new wine'

In the related language Lithuanian, the function of the definite determiner is still present, but in Slavic the clitic fused with the nominal desinences and is actually no longer analyzable as a separate morpheme. The use of the definite form was gradually expanded until the non-definite short forms were almost completely lost. For example, in Polish the short forms are preserved in very few adjectives and are further limited to the nominative case singular of the masculine gender, e.g. *zdrów* 'healthy', which is the continuation of the non-determined form and is found in certain pragmatic contexts, versus the more typical *zdrowy*, which is the old determined form. Most adjectives occur exclusively in the long form and even those in which the contrast prevailed morphologically do not contrast semantically. The earlier function of the definite determiner has been completely forgotten.

3. Relics of **-y-* and **-t-* in the plural

The *-y-* of the cliticized masculine *-yah* and the *-t-* of the feminine *-tah* are often lost, and the plural suffix occurs as *-o* (underlying /-ah/). However traces of *-y-* and *-t-* are found in the plural suffixes of many Somali dialects.

The *-t-* of the feminine clitic is regularly preserved in the plural formation in Digil dialects. Lamberti (1986a) notes than in Digil, 'plural nouns are formed by means of the suffixes *-ə*, *-yə* and mainly *-tə* (in Jiddu *-dhə*)' (Lamberti 1986a:26). Thus the plural of *min* 'house' is Tunni/Garre *mintə*, Dabarre *minetə*, Jiddu *mindhə*. See the further examples from Lamberti 1986b:47:

(19)	singular	plural	
Tunni:	deb	debto	'fire'
Dabarre:	dib	dibetə	"
Jiddu:	buu?	buuqtə	'copy-book'

One might expect that the plurals with the *-t-* in the plural suffix will be of the feminine gender and the others of the masculine gender. This is not the case, however, since numerous dialects generalized the gender of the plurals. As Lamberti indicates, in the Ashraf dialects all nouns ending in a vowel are feminine and all plurals are feminine; in May all plurals are masculine (Lamberti

1986a:26). He does not state so explicitly for the Digil dialects, but it seems from his data that Digil generalized the gender of the plurals as masculine, similarly to May.

Many, if not all Somali dialects, including the Northern dialect, have an 'irregular' plural of *il* 'eye' as *indo* 'eyes'. As Cardona (1981) points out, this root is related to Semitic *`yn* 'eye'. The change in the singular, *n* > *l*, is irregular, but not very unusual for Somali in which sonorants exhibit significant instability and often undergo sporadic dissimilation or exchange (cf. Cardona 1981:22). Thus, assuming that the root of this word is *-in-*, the *-do* in plural can be safely assumed to be a plural suffix — another instance of the old **-tah*.

A reflex of the masculine **-y-* of the suffix **-yah* is found in plurals of polysyllabic masculine nouns, grouped by Bell (1953) as nouns of class 2, corresponding to Saeed's (1985) declension 2 type. Both authors give similar descriptions of these plurals stating that the plural suffix is realized either as *-yo* (mostly after gutturals) or as *-o* with the additional feature of geminating the final consonant, if it is *b*, *d*, *dh*, *l*, or *r*. This type of gemination or *y*-insertion is not found in the plurals of feminine nouns (Saeed's declension 1; Bell's class 3) which simply add *-o* to the noun stem, i.e. the singular form. Bell, following Andrzejewski's suggestions, points out that these features differentiate the two nominal classes (Bell 1953:15). It is conceivable that the masculine declension plural suffix contains underlying /-y-/ which is assimilated to the preceding consonant in specified phonological environments creating the geminates. Notice that the nouns of this declension are masculine in the singular, and it is understandable that they were followed by the masculine form of the relativizer i.e. **yah*, respecting the grammatical agreement still present in Somali. On the other hand, the plural *-o* suffixed to the feminine nouns is developed from the feminine form **tah*. As mentioned before, the original **-t-* was lost and at the synchronic level, the plural suffix is vowel-initial. However, there is no direct correlation between the gender of the suffix and the gender of the suffixed (i.e. plural) noun. As pointed out earlier, the gender of the plurals may be generalized or assigned by the principle of polarization, that is: Plurals are of the opposite gender to the counterpart singulars, as shown before in (3).

4. Final vowel raising and other changes

The *h*-deletion, discussed in section 3, caused a consecutive phonological change, namely the raising of the final *-a* to *-o*. The *-y-* of the masculine suffix caused further fronting of *-o* to *-e*. These changes led to synchronic allophony: *-e* and *-o* phrase-finally vs. *-a* phrase-medially. Recall that the phrasal allophone *-a* occurs also before clitics, as in the examples in (20), (21), and (22). Notice the

operation of an additional rule of cross-guttural vowel assimilation, limited to the cases when the trigger is a high vowel.

(20)	aabbaheed	'her father'	(from: Saeed 1985:157)
	aabbahayo	'our (ex.) father'	
	aabbahood	'their father'	
	but:		
	aabbiihiisa	'his father'	
(21)	kabo	'shoes'	
	kabaheyga	'my shoes'	
	kabahenna	'our shoes'	
	kabahooda	'their shoes'	
	but:		
	kabihiisa	'his shoes'	
(22)	dawo	'medicine'	
	dawadeyda	'my medicine'	
	dawadeyna	'our medicine'	
	dawadooda	'their medicine'	
	note:		
	dawadiisa	'his medicine'	

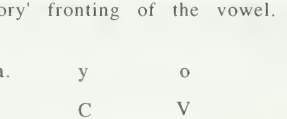
I am going to propose that the rule of vowel raising was sensitive to the CV structure and took place when the low vowel was followed by an empty C slot before a pause. An independent argument for such an account comes from considering other Somali data.

The imperative in Somali is regularly realized as a zero suffix in the singular and *-a* suffix in the plural, e.g. (all examples from Saeed 1985:78) *keen* 'bring - sg.' : *keena* 'bring - pl.'; *kari* 'cook - sg.' : *kariya* 'cook - pl.'; *samee* 'make - sg.' : *sameeya* 'make - pl.' (the intervocalic *y*-insertion after a front vowel is an independently motivated rule). Verbs with the lexical 'autobenefactive' suffix *-at-* show an apparent irregularity in their singular, e.g. *joogso* 'stop - sg.' : *joogsada* 'stop - pl.'; *qabo* 'seize - sg.' : *qabta* 'seize - pl.' (underlying /qabata/ subject to syncopy > *qabta*). The expected regular imperative singular of these verbs could be **joogsad*, **qabad*, respectively (with final voicing of *-t*). It is not impossible to derive the correct surface imperatives from the underlying regular forms by assuming morphophonemic deletion of the *-t* (> *-d*) of the autobenefactive suffix in word-final position. Then the *-a* (followed by an empty C slot) is raised to *-o* in the same way as suggested for the feminine nouns with the underlying *-ah* suffix. Notice that underlying final *-a* (e.g. *keena* mentioned earlier) does not undergo the raising rule. Raising does not take place in final *-aC* sequences, either, if the consonant is realized on the surface. There are a number of Somali words ending in such a sequence and it is

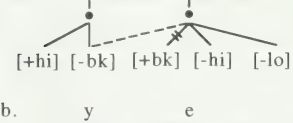
impossible to postulate a general rule of raising *-a-* to *-o-* in closed syllables. The final raising affects only the low vowel *-a-* which in the process of derivation changed its status in the syllable structure: from being the nucleus of a closed syllable to being the nucleus of an open syllable. It is a general phonetic observation that vowel quality may slightly differ in open and closed syllables. Apparently that difference is the factor triggering or preventing the final *a* > *o* change.

The rules of lexical deletion of *-h* in the final position and the final raising of the vowel changed the suffixes **-yah* and **-tah* to **-yo* and **-to*, respectively. The **-t-* of the feminine suffix, with the exceptions discussed in sections 2 and 3, has been lost, and synchronically the suffix is represented as /-ah/ in both singular (< **yahay*) and plural (< **yahiin*). Recall that the masculine **-yo* also had two functions, singular (< **yahay*) and plural (< **yahiin*), and it is somewhat mysterious why these two underwent different developments and are distinct synchronically. As mentioned in 2 the singular 'agentive' suffix is realized as *-e* in the final position, whereas the masculine plural suffix is *-yo* (cf.4.2). The development in the singular can be characterized as loss of *-y-* with 'compensatory' fronting of the vowel. The formal rule is shown below:

(24) a. y o > y e



b. y e > e



The fronting rule was presupposed by the final *a* > *o* change. Phrase-medially, where *-a* was not raised, the *-y-* was simply deleted. The synchronic analysis of the singular masculine suffix may assume an underlying representation as /-ah/ with the addition of the floating feature [-back], which associates to the non-low vowel. It is worth mentioning that Arabic men's names which end in the vowel

-a are pronounced in Somali with final *-e*, e.g. *Muse* < Ar. *Musa*, contrary to common nouns (cf. 6c) and women's names, which show *-o*, e.g. *Sahro* < Ar. *Zahra*. The fact that in masculine plural the *-y-* was not deleted and is still present underlyingly can be related to the difference in accentuation of singular and plural nouns. Following Hyman (1981) and assuming that the high tone is the manifestation of accent, plural nouns in *-o-* are accented on the final mora, as in *sanaddó* 'years', whereas singular masculine nouns in *-e* are accented on the penultimate mora, as in *báre* 'teacher'. Therefore it is plausible to argue that the *-y-* of the **-yah* suffix remained in the onset of accented syllables (i.e. in plurals), but underwent the weakening process shown in (24b) when it was in the onset of unaccented syllables (i.e. in singulars).

5. Conclusion

The hypothesis of the historical origin and development of Somali nouns ending in *-o* and *-e* explains their somewhat bizarre synchronic behavior. In addition, the case presented here is an illustrative example of strong interrelation between phonology and morphology and syntax. Only when these intertwining correlations are taken into account, can an apparent irregularity be explained in a coherent fashion.

NOTES

[1] An earlier version of this paper was read at the 20th North American Conference on Afroasiatic Linguistics (April 1992) at Harvard University, Cambridge, Mass.

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[2] For the Somali backed/fronted vowel contrast and rules of harmony see Armstrong 1934, Andrzejewski 1955 and 1956, and Farnetani 1981. The fronted vowels, which can be analyzed as [+ATR] are phonologically marked. Vowel harmony involves spreading of the [+ATR] feature within the word and larger domains. For example *dawo* 'medicine' contains [-ATR] vowels, but *dawadiisa* 'his medicine'

contains [+ATR] vowels, due to the spreading of [+ATR] from the suffix *-iisa* 'his'. Since the contrast [-ATR]/[+ATR] is by no means related to all the facts disscussed here and constitutes by itself a highly complex issue, in order to avoid long and unnecessary explanations I will ignore the contrast and throughout this paper will be using quasi-phonetic transcription with the same notation for both: [+ATR] and [-ATR] vowels, in keeping with the standard Somali orthography. For consonants, Somali orthography has also been used, with 'x' standing for [ħ] and 'c' for [ʕ].

[3] Oomen 1981 proposes for Rendille, a language very closely related to Somali, that the plural *-o* suffix developed from the feminine proto-suffix **-at/*-et*. This hypothesis is very appealing since it creates a bridge between the Sam languages and other Cushitic or more generally, Afro-Asiatic, which often in one form or another retained the feminine nominal proto-suffix **-t/-Vt/-tV*. However, Oomen's argumentation is problematic in certain aspects and perhaps, in light of the Somali evidence, should be rethought.

According to Oomen, the same hypothetical proto-suffix **-at/*-et* underwent a number of different changes and became either zero (in the citation form of feminine nouns) or an *-e* suffix in the subject position of non-determined nouns or an *-i* suffix in the subject position of determined nouns, or finally an *-ood* suffix (notice the unexplained lengthening) in the genitive case. Oomen does not explain how the same proto-form could have so many different reflexes and why. Another problem is the semantic shifts: from the feminine gender marker to subject marker in one case and the genitive marker in another case. In addition, Oomen proposes that the masculine plural suffix *-aC*, in which *C* is a copy of the stem final consonant, developed from the same **-at*. Her crucial argument for this is that when these nouns are suffixed with the *h*-initial determiners they show intervocalic geminate *-ss-*, eg. *sam* 'nose'; *samam* 'noses'; *samassa* 'the noses' < /samat+ha/ with the natural rule *-t+h-* > *-ss-*. However, the *-h-* of the plural determiners historically developed from **k* and this must have been a comparatively recent change since Somali still has *-k-*. If the determined plurals represented some ancient stage in Rendille, we would rather expect them to contain the older *-k-* form of the suffix and not the newly developed *-h-*. But in such a case it is not possible to derive the *-ss-* from */-t+k-/*. It is quite plausible that the masculine plural suffix *aC* was originally **-ay*. Then in the isolated form the final glide was strengthened and acquired the features of the preceding consonant (**samay* > *samam*), whereas in determined form the **-k-* was palatalized to [s] and eventually the [y] assimilated to it (**samay+ka* > *samaysa* > *samassa*). Oomen also proposes that the plural suffix *-Ce* developed from the feminine **-te* which,

according to her, could be a variant of **-at/*-et*. Here again, the underlying form of the suffix can be /ye/ (parallel to Somali /yo/ < **-yah*). That is, instead of Oomen's /xoxom+te/ > *xoxomme* 'clubs' there could be /xoxom+ye/ > *xoxomme*. An additional argument for the underlying /-y-/ comes from vowel-final nouns which take [-nye] in the suffix: *dulbe* 'roofmate' : pl. *dulbenye*. The intervocalic change of /y/ to palatal [ny] seems to be more natural than the assumption that the [ny] resulted from /t/.

[4] Puglielli 1984 gives two examples in which *-i/-ey* could be remnants of singulative suffixes: *askari* 'military sg.', *askar* 'military collect'; *haweeney* 'woman', *haween* 'women'. Note, however, that the first example is an Arabic borrowing: Ar. *ʕaskarii* 'military sg.', *ʕaskar* 'troops'.

[5] Abraham 1964 notes that the inflection of Somali *lah/leh* 'have' and *ah* 'be' strongly suggests that the former is morphologically composed of *la* 'with' and *ah* 'be'. The semantic interpretation of 'be with' as 'have' is straighforward, and many languages express possession in such a way (e.g. Arabic, Swahili).

[6] I disagree here with Oomen 1981, cf. footnote 3.

[7] All the disscussion in this paragraph is taken from Vaillant 1958 except for the Polish example which is my own. Reference to Vaillant has been suggested to me by H. H. Hock.

[8] I thank Bernd Heine (p.c.) for drawing my attention to these data.

[9] At least in the data at my disposal.

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ON THE USE AND FUNCTION OF CHINESE *KESHI*: AN EXPLANATION BASED ON THE NOTION 'INFERENCE SYSTEM'*

Pinmin Kuo

Various uses of the contrast connective *keshi* 'but' in Chinese are governed by important yet subtle distinctions in the directionality of the resulting inference procedure. In addition, the point-making function (i.e. the indication of the attitude of the speaker towards previous discourse and the following utterances) of *keshi* is shown to derive from these same distinctions in the directionality of the inference procedure.

1. Introduction

The English connective *but* has been studied both in terms of its semantic use (R. Lakoff 1971, Blakemore 1989) and its pragmatic function (Schiffrin 1987). In most studies, *but* is categorized by (i) its use for denial of expectation and (ii) its use for contrast. In (1a), *but* is interpreted as denial of an expectation. The first clause suggests that, being a politician, John is not honest. The use of *but* in the second clause suggests that this interpretation should be abandoned. In (1b), *but* is used merely for contrast: Although the two propositions are in contrast, neither is abandoned. In both (1a) and (1b), the speaker is understood to have presented a single conjoined proposition whose relevance is revealed by the way in which the first conjunct affects the interpretation of the second.

(1) (a) John is a politician, *but* he is honest.
(b) John likes apples, *but* Bill likes pears.

Blakemore (1989) claims that in both cases *but* instructs the hearer to derive a negation of a proposition P (P *but* ~P),[1] and in both cases the value of P is determined by the interpretation of the first clause. This claim, I think, cannot be fully supported.

The purpose of this paper is to investigate the inference system which underlies the interpretations of *but* and to show two things: (i) There is only one *but*, instead of two, or more. The interpretations of *but* vary because the readers/listeners interpret it under different inference processes. (ii) The conjuncts connected by *but* both play

roles in the interpretation of the whole sentence. The subtle but fundamental distinctions between various uses of *but* are accounted for in terms of directionality of the inference procedure. Independent evidence from Mandarin Chinese is offered in support of this analysis. Also, it is argued that the point-making function of *but* suggested by Schiffrin (1987) can be explained by this analysis.

2.1 Implication and inference

In the study of pragmatics it has been widely suggested that an implication is a proposition that is implied by the utterance of a sentence in a context even though that proposition is not a part nor an entailment of what was actually said (Gazdar 1979, Levinson 1983, Green 1989). Where, then, does the implication come from, if it is not the literal meaning of an utterance? The process of implying involves at least three factors: (i) the propositional content of the utterances, (ii) a sequence of inferences, and (iii) the language users' knowledge which includes experience, cultural background, the knowledge of language itself, knowledge of communication, knowledge about the use of language, knowledge of the history of the discourse, also, the knowledge of subject of the discourse, and the addresser's model of the world. Based on the premises of the language users' knowledge, the implications are inferred from the literal meaning by rules of inference,[2] as shown in (2).

(2) Premises: language users' knowledge
the literal meaning of the utterance

inference rules → implications (expectations)

To interpret the utterance in (3), for example, there is a group of items in the language users' knowledge which is related to the literal meaning of the utterance *he is tall* and *he is not handsome* respectively. Both conjuncts can have a very long but prioritized list of meanings which are associated with them as in (4). Consider for instance the utterance *he is tall*. If the language users believe (or have the impression) that 'people who are tall are usually handsome', 'people who are tall are good at basketball', 'people who are tall are strong', and also 'he' is a member of 'people', then implications such as 'he is handsome', 'he is good at basketball', and 'he is strong' will be inferred from the utterance. An imaginative reader could derive as many implications from an given utterance as possible, but whether it is necessary to infer something else besides the uttered propositional content is determined by the communication principle.

(3) He is tall, but he is not handsome.

(4) Language user's knowledge

Related to *he is tall*	Related to *he is not handsome*
a. people who are tall are handsome	a. people who are not handsome are unhappy
b. people who are tall are strong	b. people who are not handsome are quiet
c. people who are tall are good at basketball	c. people who are not handsome are smart
d. people who are tall are bold	d. people who are not handsome have character
e. he is a human being	...
...	

2.2 The interpretation of *but*

In the interaction with the use of *but*, the interpretation of conjoined discourses is signaled by contrast. The conventional implication of contrast relation arises solely because of the particular (non-truth-condition) properties of the word *but*. To satisfy the contrast purpose, two things need to be present: (i) the negation condition and (ii) the principle of relevance. In a listener/reader-based model of discourse, the interpretation of 'U_1 but U_2' (U stands for utterance) can be analyzed into four steps (cf. Grice's characterization of implicature 1975:49-50): (i) The speaker is presumed to be observing the maxims, or at least the Cooperative Principle. (ii) In order to make the speaker's uttering 'U_1 but U_2' consistent with (i), it is necessary to assume that the speaker believes that 'P but ~P'. (iii) The speaker reflexively expects that the addressee is able to grasp intuitively, or actively infer (ii), and the addressee is cooperative. (iv) Therefore, he/she will infer 'P, but ~P' by selecting one pair of propositions denoted or implied by U_1, and U_2 which matches the contrast relation denoted by *but*. This is essentially the 'P but ~P' approach.

To obey the communication principle, both conjuncts have to be relevant and contrast to satisfy the use of *but*, i.e., the use of *but* narrows down the possible meanings inferred from the utterance. On the one hand, based on the addressee's knowledge, there might be a long list of expectations derived from the utterance *he is tall*. On the other hand, there could be also another long list of expectations

derived from the second conjunct *he is not handsome*. One possible interpretation of discourse (3) is shown in (5a): One of the expectation derived from the first conjunct matches the requirement. The fact that 'he is not handsome' contrasts with the expectation 'he is tall and thus he is handsome'. Other potential expectations, therefore, will not be interpreted. If both conditions of the use of *but* are present, the reader/listener can follow the characterization of implication and interpret the discourse; if not, the interpretation does not succeed. As illustrated in (5b),[3] utterance U_1 denotes propositional content X which implies implication ~y; utterance U_2 denotes propositional content Y. This inference process yields '~y, but Y' which satisfies the pattern of 'P, but ~P'.

(5) a. A possible interpretation of '*he is tall, but he is not handsome*'

'he is tall'	**but**	'he is not handsome'
he is handsome		he is unhappy
he is good at basketball		he is quiet
he is strong		he is smart
he is bold		he has character
...		...

b.

U_1, but U_2:	he is tall, but he is not handsome
X, but Y:	'he is tall', but 'he is not handsome'
X implies ~y:	'he is supposed to be handsome'
~y, but Y:	'he is supposed to be handsome', but 'he is not handsome'

3. Directionality of the inference procedures

Following the process of interpretation stated above, if the propositional content 'X *but* Y' of utterance U_1 or U_2 seems irrelevant to the reader/hearer, the reader/hearer will tend to construct a sequence of inferences which make it relevant or at least cooperative. I maintain that there are four possible patterns which are derivable in reaching 'P, *but* ~P' in the interpretive process. As shown in (6), in the first type of interpretation, U_1 denotes X which implies ~y; U_2 denotes Y. In the second type, U_1 denotes X; U_2 denotes Y which implies ~x. In the third type, U_1 denotes X which implies z; U_2 denotes Y which implies ~z. In the fourth type, U_1 denotes X; U_2 denotes ~X.

(6)	Type	Utterance	Propositional content	Interpretation
	i	U_1, but U_2	(X, *but* Y)	→ (~y, *but* Y)
	ii	U_1, but U_2	(X, *but* Y)	→ (X, *but* ~x)
	iii	U_1, but U_2	(X, *but* Y)	→ (z, *but* ~z)
	iv	U_1, but U_2	(X, *but* Y)	→ (X, *but* ~X)

The direction of inference procedure for the interpretation of the utterance *He is tall, but he is not handsome* belongs to the first pattern. These four patterns will be further illustrated below.

3.1 ~y but Y

In the first pattern an implication is made from the first conjunct as shown in the Chinese example (7), where *keshi* 'but' is highlighted in the illustration: The writer marks the contrast between X and Y by inferring proposition ~y from X (represented as the boldface subscript letter in the example), and reaches the pattern of 'P, *but* ~P'. Although the proposition ~y is not part of the propositional content of the utterance just made, it is inferred from it. The expectation inferred from the pre-*keshi*-unit *Nonghaole, yexu..., pongqiao le, yexu...* 'with luck, maybe.., without luck, may...' is dependent on the unit introduced by *keshi* 'but'. From the first conjunct X, many possible propositions can be inferred, but only the one which is relevant to Y is useful in the interpretation. And since the *but*-unit is used to express the idea *dan ye bu zaihu* 'it doesn't bother them' (Y), the interpretation of the proposition X can be inferred to be 'something did bother them' (~y) and this then satisfies both the relevance principle and the negation condition. Thus the interpretation of the whole sentence can be interpreted as 'with luck, maybe something happens, and without luck, maybe some other things happen — it should bother them a lot, *but* actually it does not matter at all.' *Keshi* is used to mark the effect that what the reader expects from the clause preceding the *keshi*-unit is abandoned, and the *keshi*-unit is asserted.

(7) X, *but* Y
X implies ~y: 'it bothered them a lot'

~y, *but* Y: 'it should bother them a lot', *but* it didn't bother them at all'

[~y Nonghao le, yexu yixiazi nong ge yi kuai liang
with luck P[4] maybe once make cl one dollar two

kuai de; pongqiao le, yexu baihao yi tian, lian
dollar P chance P maybe waste one day even

'chefener' yemei mei zhaoluo,] keshi [Y ye bu zaihu.] (p. 3)[5]
rent also no way but also not bother

'[~Y With luck, a single trip can net one or two silver dollars; without luck, it may happen that they spend the whole day idle, not even recouping their rickshaw rent.] But [Y still, it didn't bother them at all.]'

The point is that neither X nor Y is independent; only by being connected to the interpretation of X can Y be interpreted. Also, X may imply many different propositions, but only the one which negates (or incompletely negates) Y is construed as relevant.

3.2 X but ~x

In the second case, an implication is made from the second conjunct: Proposition Y introduced by a contrast-connective is understood to imply a proposition ~x which is in contrast to the preceding proposition X. Unlike the first case, in (8), *ta bugan dong* 'he was afraid to move' does not negate the *keshi*-unit; instead, the *keshi*-unit *keshi mashang ying li luan qi lai* '*but* around him the camp was immediately thrown into confusion' implies that something he must do in this situation is contrary to his fear of moving: 'he must move.' Again, this inference contrasts with what is conveyed by the pre-*keshi*-unit, by satisfying both the relevance principle and the negation condition.

(8) X, *but* Y
Y implies ~x: 'he had to move.'

X, *but* ~x: 'he expected not to move,' *but* 'he had to move.'

[XTa bugan dong,] **keshi** [~x mashang ying li
he dare-not move but immediately camp inside

luan qilai] (p. 20)
chaos up

'[X He was afraid to move,] but [~x around him the camp was immediately thrown into confusion].'

3.3 z but ~z

Sometimes, the direction of inference from one conjunct to the other is not apparent. In this case, it is possible that both propositions X and Y are understood to imply other things which contrast with each other. The interpretations of both conjuncts involve sets of inference as shown in (9). In the text, the first conjunct *qian shao* 'money is little' does not imply *kuai pao* 'need run fast' which would negate the second conjunct *wu xu kuai pao* 'need not run fast'. Similarly, *wu xu kuai pao* 'need not run fast' cannot be

made to imply 'a lot of money' which would negate the pre-*keshi*-unit *qian shao* 'money is little'. Instead, one of the expectations derived from the pre-*keshi*-unit is the expression 'money is little, which is a bad thing'. A corresponding negated meaning can be derived from the *keshi*-clause: i.e. 'need not run fast, which is not a bad thing'. The expectations derived from both conjuncts: 'a bad thing' vs 'not a bad thing' satisfy the contrastive condition.

(9) X, *but* Y
X implies z: 'it is a bad thing.'
Y implies ~z: 'it is not bad.'

---

z, *but* ~z: 'it should be a bad thing,' but 'it is not bad.'

Dao guashi guoshi caishi qu la
to melon-market fruit-market vegetable-market to pull

huoche, dou shi tamen; [z qian shao] **keshi**
riskshaw all be they money few but

[~z wuxu kuai pao ne](p. 4)
needless fast run P

'They are the ones who take merchandise to the melon, fruit or vegetable markets; [z the amount of money (they get for this) is little] but [~z they don't need to run fast.]'

3.4 X but ~X

In contrast to the three cases discussed above, in the last case, almost no inference process is involved in the interpretation of each of the conjuncts. Again, the inferential process is only a matter of degree. It can vary from individual to individual. If two conjuncts are explicitly in contrast, then less inference is involved in the interpretation. In the example shown in (10), the contrast between the two conjuncts is shown by the propositions 'the spring rain never comes but war comes for sure.' The interpretations derived from both sides contrast with each other by satisfying two conditions: the principles of relevance and negation.

(10) X, *but* ~X: 'Spring rains won't come' but 'war comes no matter whether people hope for it or not'

[x Chun yu bu yiding shunzhe renmin de panwang
spring rain not sure for people NOM hope

er jiangluo,] **keshi** [~x zhanzheng buguan you mei
then fall but war regardless have not

you ren panwang zong hui laidao] (p. 15)
have people hope always will come

'[x Spring rains are not sure to fall when the people hope for them,] but [~x war comes anyway, regardless of whether or not anyone wants it.]'

Although the two conjuncts are clearly in contrast, this contrast is partial. 'Spring rains' and 'war' are not being contrasted but rather the idea of 'come' and 'won't come'. Indeed all contrasts are partial to one degree or another since absolute contrasts of the type: 'He is tired but he is not tired' on the surface, at least, are not informative. Thus a hearer's knowledge of the world as well as her understanding of semantic relations is vital to her interpretation of contrasts.

3.5 Conclusions of section 3

If we make allowances for variation in the directionality of inference, in all four cases of *keshi*-structures examined above, both conditions for contrast (the negation principle and the relevance principle) are satisfied, and the form of 'P *but* ~P' is obtained at the final stage of interpretation.

On the one hand, these four patterns have one thing in common: Each of them relates to two conjuncts. Since *keshi* is a connective, it has the basic property of a connective. I call this basic default value a 'transition marking function'.

On the other hand, the major difference between these four cases is the degree of 'inferential contrast'. The point is that in a situation where a hearer has immediate access to an assumption P, any utterance U which conveys not-P will be taken as evidence that the speaker's belief in not-P is stronger than in P. Hence P is abandoned or is given less attention. In cases one, two, and three, *keshi* marks the 'inferential contrast' through a particular set of inferential processes. Either or both the conjuncts may be abandoned; i.e., the expectation is denial. But in case four, less inferential contrast is marked because less inference is involved; so although the two propositions are in contrast, neither of them is abandoned. In the four cases the transition marking function and the inferential contrast marking function mix together. The inferential contrast is more apparent in cases one, two, and three, but the transition function is more apparent in the fourth case.

The relative rates of occurrence of the four cases are given in (11).

(11) Occurrences of *keshi* in Luotuo Xiangzi (Chs. 1-4) in different types of inference (62 in total)

Type	Proposition	Interpretation	Frequency	Point-making
i.	(X, *but* Y)	→ (~y, *but* Y)	39	Y
ii.	(X, *but* Y)	→ (X, *but* ~x)	5	X
iii.	(X, *but* Y)	→ (z, *but* ~z)	5	Z
iv.	(X, *but* Y)	→ (X, *but* ~X)	13	X

As might be expected, the first case ('the honest politician' of (1a)) with its denial of expectation is the most common. Case four, the relatively straightforward contrastive ('John likes apples, but Bill likes pears' of (1b)) is the second most common. Categories two and three, also denials of expectations, are less frequent. It is perhaps this reduced frequency of usage which is responsible for the fact that the types two and three have not been distinguished in earlier analyses, which as noted in the introduction limit themselves to the types one and four. The preceding discussion shows that, whether their frequency of use, the types two and three need to be recognized as separate categories. At the same time, each of the four types recognized involves the making of a different point (X, Y, Z), albeit by different inferences.

4.1 Point-making function of *keshi*

So far, the discussion has centered on the contrastive use of the connective *keshi*. Another important aspect that makes the study of connectives appealing is that they have point-making functions related to discourse interpretation.

To check the discourse functions of *keshi* in Mandarin Chinese, some claims about the functions of connectives in English are briefly reviewed first. Brown & Yule (1983: ch. 7) suggest that the function of the conjunctions in discourse would be explainable only in terms of 'an utterance-as-action analysis'. For instance, in the use of the conjunction *because* ('cause'), our understanding of discourse is based on our assumption that a reason is being expressed for an action performed in speaking. The conjunction *because* ('cause') is not only used as a logical connector (P *because* Q) to connect two clauses in a complex sentence, but also to introduce the reason for asking a question, or introducing a particular subject into a conversation, that is, to achieve a complete act 'A mention (or ask) P *because* Q'. It is only by recognizing the action performed by each utterance within the conventional sequencing of such actions that we can accept this sequence as coherent discourse.

I claim that, similarly, *keshi* is not only used to connect two contrasting propositions (by different degrees of inference) but also

to achieve a 'complete act'. Following the uses of *keshi* discussed above, it is suggested that the way the inference goes reflects the attitude of the speaker's attention towards the previous discourse and the following utterances. This claim is supported by the data and discussion below.

4.2 Point development in *keshi*

Note that the final stage in the inferential procedure in all four cases examined above implies that the interpretation of THE ATTENTION OF THE WRITER is related to its preceding and following discourse. In the case of X, *but* Y, if proposition X implies ~y, then the speaker's attention is supposed to be switched from facts about X to facts about Y. A strong piece of evidence to support this hypothesis is that the discourse following the unit connected by *keshi* is staying at the same level of attention as that in the *keshi*-unit. Once the *keshi*-unit is used to imply the speaker's new attention, the immediately following discourse will develop the same point. To develop the same point means to illustrate the idea conveyed in the preceding discourse by giving reasons, examples, or positions.

For instance in (12), the inferential procedure of the unit connected by *keshi* belongs to the first type X, *but* Y → ~y, *but* Y. The pre-*keshi*-unit is used to describe the high prestige and pride long-distance runners have in comparison with short-distance runners. This description may also imply that the long-distance runners have high prestige and pride in comparison with ALL the other groups of runners (X→~y). However, this is not true. The *keshi*-unit contrasts with the pre-*keshi*-unit by reflecting the fact that the long-distance runners do not have the same prestige as the rickshawmen of Dongjiaominxiang (Y). The discourse following the *keshi*-unit continues the writer's point by describing the rickshawmen of Dongjiaominxiang, thus further developing point Y.

(12) X, *but* Y
X implies ~y

~y *but* Y

[~y Sheng yu Xiyuandian de ziran yi zou Xishan,
born in Xiyuandian NOM naturally by run Xishan

Yanjing, Qinghua, bijiao fangbian, tongyang, zai Andingmen
Yanjing Qinghua more convenient same at Andingmen

wai de zou Qinghe, Beiyuan, zai Yongdingmen wai
outside NOM run Qinghe Beiyuan at Yongdingmen outside

de zou Nanyua, zhi shi pao chang tang de, buyuan
NOM run Nanyua this is run long run NOM unwilling

la sanzuo yinwei la yitang bianshi yitang,
pull short-trip because pull one-trip then one-trip

buxieyu san wu ge tongzi de qiongcou le] **keshi**
not-care three five CL copper NOM scoff P but

[Y tamen hai bu ru Dongjiaominxiang de che fu de
they still not as Dongjiaominxiang NOM runner NOM

qiercheng] [y Zhixie zhuan la yang maimai de jiangjiu
proud these only pull foreign trade NOM like

yiqier you Jiaominxiang la dao Yuquanshan] (p.5)
non-stop from Jiaominxiang pull to Jade Fountain mount.

'[~y Those living in the western suburbs around Xiyuan and Haidian naturally prefer to take fares to the Western Hills or the universities of Yanjing and Qingjua; those from the northern suburbs outside Andingmen Gate ply the Qingho and Beiyuan route, while those in the south outside Yongdingmen Gate will go as far as Nanyuan. Those long-distance runners will make trips which pay, and scoff at the paltry three or five coppers which is all that one gets for short distances.] But [Y they still lose their wind sooner than the rickshawmen of Dongjiaominxiang, the "legation Quarter".] [y These are real long-distance runners who cater solely for the foreign trade and pride themselves on being able to run non-stop from the diplomatic quarter all the way out to Mt. Jade Fountain.]

Similarly, in the type two of the inference processes, the point asserted by the writer is further developed in the discourse following the *keshi*-unit. For instance, in example (13), the interpretation of the *keshi*-connected-unit asserts that 'he must move' and the subsequent discourse is describing the way he moved: 'he stopped breathing ... he slowly, stopped breathing, climbed on the ground to search those camels.' Thus the point which the writer asserted in the *keshi*-connected-unit is developed.

(13) X, *but* Y
Y implies ~x

X *but* ~x

[X Ta bugan dong,] **keshi** [~x mashang ying li
he dare not move but immediately camp inside

luan qilai.] [x Ta bizhu le qi, jihui dao le! ... Ta
chaos up he stop P breath chance come P he

manman de, bizhe qi, zai dishang pa, mudi shi
slowly NOM stop breath at ground climb purpose is

zai zhaodao na ji pi luotuo] (p. 20)
at search that several CL camels

'[x He was afraid to move,] but [~x around him the camp was immediately thrown into confusion.] [x He stopped breathing ... He slowly stopped breathing, climbed on the ground to search those camels]'

4.3 Point return in *keshi*

Another use of *keshi* can be interpreted as the speaker's effort to return to a prior concern in order to make a point. It is found that the case of *keshi* used as a point return device usually involves a certain kind of situation: The pre-*keshi*-unit provides additional information on a previous speech act. It is additional because it is not the core of the speaker's concern. However it may help the hearer in understanding the related information. The additional information provided by the pre-*keshi*-unit is used to emphasize the contrast between the speaker's point and the information asserted. *Keshi*, then, is used to mark this contrast and return to the speaker's point expressed in the speech act preceding the pre-*keshi*-unit. The speech act could be a question or an assertion. The *keshi*-unit then can be an answer which reflects the speaker's real concern, or an assertion which reasserts the speaker's point. As pointed out by Schiffrin (1987), *but* marks functionally differentiated portions of answers — portions which fulfill different expectations of a prior question. In this role, *but* is similar to *anyway*. The use of *keshi* in point return function serves to indicate relevance in discourse, by using a repeated point to display 'a committed orientation toward a proposition in which stating one's point is one of the speaker's goals (1987:177).

In (14), the first discourse element (X) states that Xiangzi 'did not take very much to heart the rumor that he heard outside.' This statement is followed by specific illustrations of such 'rumors'. The second element of the discourse (Y), however, can be read as suggesting that, by 'not hunting for trouble', Xiangzi was protecting himself and thus did believe the rumors. It is this suggestion which is derived by the following *keshi*-unit: 'But as for the rumors themselves, he did not believe them.' This assertion then returns to the point asserted in the very beginning.

(14)

[x Waimian de yaoyan ta bu da wang xingli ting,
outside NOM rumor he not quite toward mind hear

sheme Xiyuan you lai le bing, sheme Changxindian
what Xiyuan again come P soldier what Changxindian

you dashang le zhang, sheme Xizhimen wai you zai
have fight P war what Xizhimen outside again have

lafu, sheme Qihuamen yijing guanle bantian, ta dou
conscript what Qihuamen already close half-day he all

bu da zhuyi.] [Y Ziran jieshang buhu yi dou
not too notice naturally on-street store already all

guanshang le men, er malushang zhan man le wuzhuang
close P door and on-street stand full P armed

jingchaju yu baandui, ta ye bubian
police and peace-preservation he too needless

guyi qu zhao buzizai, ye he bieran yiyang
on-purpose go look-for trouble also with others same

jimang shou le che.] **Keshi**, [X yaoyan, ta bu xing. (p. 14)
quickly close P rickshaw but rumor he not believe

'[X He did not take very much to heart the rumor that he heard outside; he could not be bothered with all the talk about soldiers' coming back to the Western Gardens, or the fighting at Chang Hsin Tien, or the conscripting of men outside the Western Gate of Forthrightness, or the Gate of Uniform Transformation's being already closed for half a day.] [Y Naturally the stores would have closed their doors, and the streets would be full of armed police and members of the Peace Preservation Corps. He could not go hunting for trouble, and like everybody else he would put up his rickshaw as quickly as he could.] [X But as for the rumors themselves he did not believe them.]

Another kind of speech act occurs when the discourse preceding the *keshi*-connected-units is a question. In (15), *keshi* marks differentiated portions of answer to the question, 'Was he to believe that they had dragged back and forth for so many days only to come out whetstone Pass, to the West of Beijing?': 'Did not know this' in the pre-*keshi*-unit vs. 'did know some other things' in the *keshi*-unit. The pre-*keshi*-unit gives an apparently complete answer to the question. But the *keshi*-unit provides the real answer and, is so doing, expresses the writer's point of view.

(15)

[X Nandao raolairaoqu, rao dao Moushikou lai le ma?]
wonder drag-around drag to Moushikou come P Q

[Y Zhe shi sheme zhanlue — jiashi zhequn zhihui
this is what strategy if this-group only-can

paolu yu qiangjie de bingmen ye hui you zhanlue —
run and rob NOM soldiers also can have strategy

ta bu xiaode.] **Keshi** [x ta que zhidao, jiaru zhe
he not know but he actually know if here

zhenshi Moushoukou dehua, bingmen bi shi rao bu
really-be Moushoukou in-case soldiers must be drag not

chu shan qu, er xiang dao shan xia lai
out mountain go so think to mountain foot come

zhao ge huolu.] (p. 19)
look-for CL exit

'[x Was he to believe that they had dragged back and forth for so many days only to come out at Whetstone Pass, to the West of Peking?] [y He did not know what kind of strategy that was, or if this gang of troops, who could march and steal, were capable of strategy.] [x But one thing he did know: if this is really Whetstone Pass, then the soldiers had not been able to find their way across the mountains and had come back to the foot of them to get their bearings.]'

While it is clear in the case of point-development that the subsequent discourse supports the point asserted in the *keshi*-unit, in the case of point-returning, this is not as clearly the case.

Chao (1969) introduces two terms for different types of connectives in Chinese: SYNTACTIC connectives and MACROSYNTACTIC connectives. The syntactic connectives are used to connect clauses within a sentence; the macrosyntactic connectives are used to connect sentences. *Keshi* can be used in both ways. Although this has not been treated in the previous discussion, there is an important distinction between the syntactic, sentential-connective use of *keshi*, and the macrosyntactic, intersentential-connective use of *keshi*. The syntactic use of *keshi* as a point-making device is much more limited than its macrosyntactic use. As a macrosyntactic connective, *keshi* continues the point of the discourse prior to its occurrence. The point-developing discourse may be represented by several sentences; or by the rest of the *keshi* paragraph (as shown in examples (14) and (15)), or indeed, even by the rest of the story. On the other hand, in the use of *keshi* as a syntactic connective, only a small range of point development is found. In these cases, the point-developing discourse is only usually a single sentence in length, or there may be no development at all. Similar phenomena are observed in cases of point-returning.

5. Conclusion

Study of a Chinese written text shows that the contrast connective *keshi* 'but' is used to reflect contrast relations in a

coherent discourse to help the speaker guide the hearer to a full intended message. The interaction of two main functions of *keshi*, a transition marking function, and an inferential contrast marking function, provides an explanation for the phenomena reflected in the so-called expectation-denial use of *but*, and the contrast use of *but*. There is only one *keshi* 'but', however, rather than two or more. The interpretations of *keshi* vary because the readers/listeners interpret it under different inference processes. Furthermore, this generalization of inferential procedures provides evidence for the claim that the contrast connectives can be used as a point-making device. In the point-development function of *keshi*, the final stage in the inferential procedure in all four cases implies that the interpretation of the attention of the writer is related to its preceding and following discourse. In the point-returning function of *keshi*, *keshi* is interpreted as the speaker's effort to return to a prior concern.

NOTES

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[1] The letter on both sides indicates that the final propositions connected by *but* are relevant to each other (Grice's maxim of relation). ~P stands for not-P.

[2] Rules of reference are a sequence of simpler argument forms whose validity has already been established. All the premises are assumed to be true. The result is derived from two of them by a valid argument and can be added to the stock of premises for use in further steps. Some basic rules of inference are discussed in Wall 1972.

[3] The capital letters X, Y, Z stand for propositions (or facts) derived from the propositional content, and the small letters x, y, z stand for the propositions (or implications) inferred by the language users based on the inference process and their knowledge.

[4] Abbreviations in the glosses: P = particle, NOM = nominalizer, CL = classifier, Q = question marker.

[5] The examples are excerpted from Laoshe's *Luotuo Xiangzi* (1935), and the English translations in all examples are based on King 1945 and Shi 1981.

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OCP VIOLATIONS IN SETSWANA: EVIDENCE FOR REDEFINING THE OCP?

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This paper addresses the tonal facts of Setswana as they relate to the Obligatory Contour Principle. My assumption is that Setswana is a language that observes the OCP. I will demonstrate that apparent violations of the OCP in this language can be accounted for, not by totally rejecting the adherence of this language to the OCP, but by assuming that Setswana tonology allows some violations such as sequences of singly-linked high tones, while rejecting sequences of multiply-linked high tones. This implies that the language dictates whether it will take the strong form of the OCP or a weaker form of the OCP.

It is the purpose of this paper to show that the OCP is a universal principle which may have different manifestations in different languages, and therefore may need some redefining for particular languages.

1. Introduction

In this paper, I claim that Setswana, a Southern Bantu language, observes the Obligatory Contour Principle (OCP). While I claim that the OCP is prevalent in this language, I will also illustrate that this claim is not without problems. While the OCP serves as a constraint on some phonological rules across the board, it is not without problems, as indicated by the controversial nature of the ideas of the authors cited in this study. I provide an alternative analysis for apparent OCP violations found in Setswana by proposing that they are not true violations, but legal forms licensed by language-particular rules in conjunction with the OCP and other universal principles. This can be done by assuming two types of high tones in Setswana, a lexical high tone and a grammatical high tone. These high tones, which are distinguishable by their origin and manner of spreading, provide the basis of this analysis. Using this distinction, I claim that the OCP violations of Setswana should be viewed not as true violations but as apparent violations which can be resolved easily if we consider the two types of high tones.

Through the analysis of the tonal data of Setswana I show that this language assumes a weaker version of the OCP by allowing sequences of singly-linked high tones while disallowing sequences of doubly- and multiply-linked high tones. Sequences of multiply-linked high tones with single high tones are also not tolerated in Setswana. The "apparent" OCP violations resulting from these sequences will be accounted for by language-particular manifestations of the OCP. In other words, this paper supports the universality of the OCP, but suggests a parametric definition of the principle.

2. Background

The OCP was first proposed by Leben (1973) as a constraint on some tonal rules and was further modified by Leben (1978) after being criticized by Goldsmith (1976). This paper will follow the definition of the OCP as provided by McCarthy (1986). The OCP is a principle that requires that spreading be the only way to describe assimilatory processes, instead of the traditional feature-changing rules; cf. Yip 1988. McCarthy concludes in his 1986 paper that the OCP has widespread effects in phonology, being able to account for many unrelated rules in the phonologies of the languages of the world. In McCarthy's terms, the OCP is a universal principle that should be assumed to be ON unless otherwise stated.

This is the position I assume for Setswana. The OCP effects noted by McCarthy can be observed in this language: The OCP (a) is a universal constraint, (b) serves as a rule blocker, (c) serves as a rule trigger. I will restrict my discussion to OCP effects as they constrain tonal representations in this language by triggering rules that repair OCP violations or by blocking rules that would produce these violations.

It is a well-known fact that the OCP does not always make correct predictions, and hence it is not without its critics. In fact, the inconsistency with which the OCP operates has led some of its critics to reject its status as a universal principle. For example, Odden (1986) rejects the OCP as a universal principle by Occam's razor. He proposes that the OCP be regarded as a language-particular rule because it is frequently violated in the very languages that are claimed to be observing it. For instance, languages may violate the OCP at one level, for example, the lexical level, and not at the grammatical level. However, some supporters of the OCP like Yip (1988) still see it as a universal principle and argue that different languages may have different ways of repairing OCP violations.

In this paper, I argue that Setswana is one of those tonal languages which observes the OCP. In order to demonstrate that this is the case, I assume following Pulleyblank (1983), that some tones

are linked to vowels in the lexicon, while other tones are linked at a later stage by tonal rules of the language. The first assumption is supported by the fact that in Setswana some verbs occur with an initial high tone (a lexical high tone) after toneless prefixes such as the infinitive morpheme *go-*, while others do not, as illustrated in (1) and (2). Based on this observation, some Setswana verbs can henceforth be classified as HIGH verbs, which bear a high tone syllable-initially, while others are TONELESS verbs, which lack a high tone in the underlying structure.

(1) High

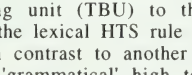
a. go-já	'to eat'
b. go-réka	'to buy'
c. go-rékísa	'to sell'
d. go-búdúlala	'to close one's eyes'

(2) Toneless

a. go-lwa	'to fight'
b. go-lema	'to plough'
c. go-lemela	'to plough for'
d. go-kgorometsa	'to push'

Note that the high verbs of three or more syllables display a second high tone; cf. (1c,d). This phenomenon can be accounted for by a rule of High Tone Spread (HTS) which spreads a high tone one tone-bearing unit (TBU) to the right. This rule will henceforth be known as the lexical HTS rule (3), as it spreads a LEXICAL high tone. (This is in contrast to another HTS rule, to be discussed later, which spreads a 'grammatical' high tone.)

(3) High Tone Spread



'to close one's eyes'

The low tones on the toneless verb stems (2) and other syllables are accounted for by a default low tone rule, which renders toneless syllables low-toned on the surface. The low tone on the final syllable of bisyllabic verb stems (1b) is explainable by a rule of Extratonality, which makes the final syllable invisible to the HTS rule. The final syllable becomes low-toned by default. This extratonality rule is based on a notion borrowed from Prince (1983), known as the

principle of Extrametricality, a concept through which certain syllables are invisible to some rules.

So far I have illustrated that Setswana verb stems can be classified into high versus toneless. The lexical tonal rules found to operate in Setswana are (a) the lexical HTS rule, (b) the Extratonality rule, and (c) a default low tone rule which makes all toneless syllables low-toned on the surface.

3. OCP Violations versus Lexical High Tone

In this section, I discuss apparent OCP violations at the lexical level. By definition, any sequence of high tones would constitute a violation of the OCP. In Setswana, potential violations of this type are resolved by 'OCP-induced' rules that act as repair strategies. The rules that are proposed for this purpose are: High Fusion, a rule that fuses sequences of high tones into a single multiply-linked high tone, Left Branch Delink (LBD), a rule which delinks the left branch of a multiply-linked high tone when it follows a high tone, and Right Branch Delink (RBD), a rule that delinks the right branch of a multiply-linked high tone when it precedes a high tone. RBD and LBD are mirror images of one another as shown in Kisseberth & Mmusi forthcoming. The details of these rules will become clearer as the paper develops. The object prefix high tone in Setswana will be used to illustrate how these rules function to prevent would-be OCP violations.

Setswana has an object prefix which in this paper is assumed to be underlyingly high-toned[1] and morphologically supplied, since it appears with the object prefix. The object prefixes, as in other Bantu languages, always agree with the object noun in class, gender, and plurality. The influence of this high tone is evident in the toneless verbs as illustrated by the examples in (4).

(4) High

go-**é**-ja	'to eat it'
go-**é**-réka	'to buy it'
go-**é**-rékísa	'to sell it'
go-**é**-khúrúmetsa	'to cover it'

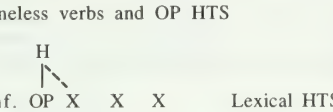
Toneless

go-**é**-lwa	'to fight it'
go-**é**-léma	'to plough it'
go-**é**-fétola	'to change it'
go-**é**-kgórometsa	'to push it'

Leaving aside the monosyllabic forms (which warrant a different and detailed account of their own), note the presence of a high tone on the initial syllable of the toneless verbs. This high tone

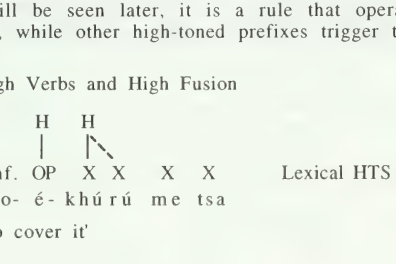
can be explained through lexical HTS from the high tone of the object prefix; cf. (5).

(5) Toneless verbs and OP HTS



In the high verbs, the high tone on the object prefix is followed by a lexical high tone on the initial syllable of the verb stem and spreading to the next syllable of the right, unless that syllable is extratonal (see §2 above). This constitutes a violation of the OCP, as there are two successive lexical high tones on a tonal tier. To resolve this dilemma, I propose a rule of High Fusion whose purpose is to fuse the two distinct high tones, the high tone of the first object prefix and the lexical high tone and, into a multiply-linked high tone; cf. (6). This is a language-particular rule to prevent violations of the OCP. (As will be seen later, it is a rule that operates on objects prefixes only, while other high-toned prefixes trigger the Left Branch Delink rule.)

(6) High Verbs and High Fusion



In the case of SINGLE object prefixes, then, High Fusion eliminates potential violations of the OCP. Setswana, however, also uses MULTIPLE object prefixes which present a strong potential for OCP violations. It is worth investigating what rules the language possesses to eliminate these violations. The examples in (7) exhibit sequences of double object prefixes in Setswana.

(7) Double Object Prefixes

High

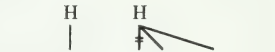
go-**mó**-**e**-jéla	<-jéla>	'to eat it for him'
go-**mó**-**e**-rékéla	<-rékéla>	'to buy it for him'
go-**mó**-**e**-khúrúmeletsa	<-khúrúmeletsa>	'to cover it for him'

Toneless

go-**mó**-**e**-tléla	<-tlela>	'to bring it for him/her'
go-**mó**-**e**-lémela	<-lemela>	'to plough it for him/her'
go-**mó**-**e**-kgóromeletsa	<-kgorometsa>	'to bring it for him/her'

Note that in these structures, (a) the object prefix nearest to the verb stem is obligatorily low-toned, even though (b) the same prefix (*e-*) is obligatorily high-toned if not preceded by another object prefix; cf. (4) - (5) above. We can account for the structures in (7) by postulating a Left Branch Delink rule (LDB) which delinks the left branch of a multiply-linked lexical high tone that follows another lexical high tone. As the example in (8) shows, LBD operates on the output of High Fusion in high verbs (8a) and on the output of HTS in toneless verbs (8b). The Left Branch Delink rule illustrated in (8) can be stated as in (9).[2]

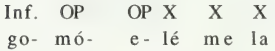
(8) High



High Fusion; LBD

'to buy it for him/her'

Toneless



Lexical HTS; LBD

'to plough it for him/her'

(9) Left Branch Delink rule

LBD, then, is a language particular-rule which repairs OCP violations. Its effects go beyond double object prefixes, as can be seen in (10), where it is triggered by the high-toned conditioned (potential) prefix *-ká-*.

(10) High verb stems without object prefixes

go-ká-reká	<-réka>	'to be able to buy'
go-ká-rekísa	<-rékísa>	'to be able to sell'
go-ká-khurúmetsa	<-khúrúmetsa>	'to be able to cover'

Setswana has another rule called the Right Branch Delink rule, which is a mirror-image of the Left Branch Delink rule. It delinks the right branch of a multiply-linked high tone when another high tone follows; cf. (11). It likewise serves as a repair strategy for OCP violations.

(11)

The examples in (12) serve to illustrate that the Right Branch Delink rule applies in present tense verb forms, with the verb stem following a high-toned subject prefix, the third person subject prefix *ó-*. This form of the present tense in Setswana always occurs with the toneless aspect marker *-a-*. Note the difference between the high verbs and the toneless verbs. In the high verbs the tone of the aspect marker *-a-* is low after the high subject prefix, whereas it is high-toned in the case of the toneless verbs.

(12) High

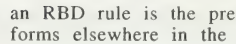
ó-a-réka	'(s)he is buying'
ó-a-rékísa	'(s)he is selling'
ó-a-khúrúmetsa	'(s)he is covering'

Toneless

ó-á-lema	'(s)he is ploughing'
ó-á-fetoga	'(s)he is changing'
ó-á-kgorometsa	'(s)he is pushing'

In the toneless verbs in (12), it seems that lexical HTS applies to produce the high tone on the aspect marker. The absence of a high tone on the aspect marker in the high verb stems could be captured by either (a) arguing that RBD applied after lexical HTS to produce these forms in order to avoid an OCP violation (cf. (13) below), or (b) that lexical HTS was blocked by the OCP just in case an OCP violation was imminent. Either way, the violations are resolved. The account

postulating an RBD rule is the preferred explanation since it explains other such forms elsewhere in the language.

(13) 
SP X X X X X
ó- a- khú rú me tsa Lexical HTS; RBD

'(s)he is covering'

The application of RBD is further exemplified by the forms in (14), which involve an object prefix. The absence of a high tone on the aspect marker *-a-*, following the high-toned subject prefix *-ó-*, illustrates that RBD has applied.

(14) High

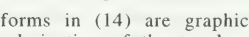
ó-a-é-réka	'(s)he is buying it'
ó-a-bá-rékísa	'(s)he is selling it'
ó-a-é-khúrúmetsa	'(s)he is covering it'

Toneless

ó-a-é-léma	'(s)he is ploughing it'
ó-a-ó-fétola	'(s)he is changing it'
ó-a-sé-kgórometsa	'(s)he is pushing it'

The forms in (14) are graphically accounted for in (15), which shows the derivation of the tonal patterns of both types of verbs.

(15) Right Branch Delink


SP- a- OP X X X X
ó- a- sé-kgó ro me tsa HTS; RBD (Toneless)

SP- a- OP X X X X
ó- a- é-khú rú me tsa High Fu.; RBD (High)

The only difference between these verb types is that the multiply-linked high tone of the high verbs is a result of High Fusion of the high tone of the verb stem with that of the object prefix, while the multiply-linked high tone of the toneless verbs is a result of lexical HTS. Lexical HTS applies to spread a high tone from the high-toned subject prefix morpheme to the present tense morpheme *a-*. Right

Branch Delink then delinks the right branch from the *a-* to prevent OCP violations.

The above tonal facts raise the question of how RBD and LBD interact with one another. What is known so far is that both RBD and LBD are triggered by the OCP and that they are mirror images of one another. This fact leads me to conclude that these rules are not ordered with respect to one another as they are basically one and the same rule. The environment itself will trigger one or the other. Perhaps evidence for this claim lies in the fact that when the environment for both rules prevails then either RBD or LBD will apply as illustrated by the alternative forms for (14) that are exemplified in (16).

(16) LBD instead of RBD

High

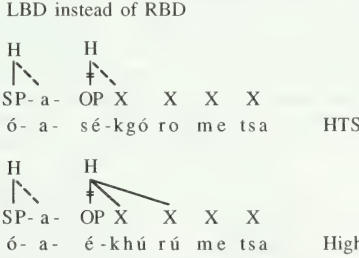
ó-á-e-réka	'(s)he is buying it'
ó-á-ba-rékísa	'(s)he is selling it'
ó-á-e-khúrúmetsa	'(s)he is covering it'

Toneless

ó-á-e-léma	'(s)he is ploughing it'
ó-á-e-fétola	'(s)he is changing it'
ó-á-se-kgórometsa	'(s)he is pushing it'

The phenomena in (16) are schematically captured in (17) which represents both toneless and high verb stems.

(17) LBD instead of RBD



In summary, Setswana has two OCP induced rules, namely, the Right Branch Delink rule and the Left Branch Delink rule which are mirror images of one another. These rules serve to repair OCP violations that have been caused by productive tonal rules such as lexical HTS. Both rules operate on doubly-linked or multiply-linked high tones by delinking a single branch in order to prevent OCP violations. The conclusion drawn from this discussion is that

sequences of singly-linked high tones in Setswana do not constitute a violation of the OCP whereas sequences of doubly- and multiply-linked high tones do, as well as when they follow or precede a single high tone. In other words, the OCP needs to be redefined for Setswana and maybe for other languages as well — as a parametrical principle. By assuming such a parametrical OCP, we can account for apparent OCP violations in Setswana while retaining the essential validity of the OCP for the language.

What follows is a discussion of more OCP "violations" in Setswana. These occur at the grammatical level. It is my claim that these, too, are only apparent violations. The claim that these high tone sequences do not constitute OCP violations is supported by showing (a) that there are two types of HTS (lexical and grammatical HTS), and (b) assuming a morpheme tier hypothesis to distinguish lexical versus grammatical high tones.

4. OCP Violations and Grammatical Tone

The tonal pattern of the perfective tense is used to show the effects of grammatical HTS that produce apparent OCP violations. I will show that these are not OCP violations by providing an account of the origin of these sequences.

4.1 The tonal pattern of the perfective verb stem

The perfective tense in Setswana is formed by attaching the suffix *-ile* or *-tse* to the verb root, as exemplified in (18). These two suffixes are allomorphs of the perfective morpheme. A low-toned subject prefix morpheme *ke-* is attached to the verb stem since the perfective form cannot cooccur with the infinitive prefix *go-*.

The examples in (18) illustrate the tonal pattern of the verb stem in the perfective tense when it is in phrase-final position (that is, when there is no object or adverb following the verb stem). Notice the absence of the high tone on the toneless forms as opposed to the high verb types.

(18) High

ke-jéle	<-já >	'I have eaten'
ke-rékíle	<-réka >	'I have bought'
ke-rékísitse	<-rékísa >	'I have sold'
ke-khúrúmeditse	<-khúrúmetsa >	'I have covered'

Toneless

ke-wele	<-wa >	'I have fallen'
ke-lemile	<-lema >	'I have ploughed'
ke-fetotse	<-fetola >	'I have changed'
ke-kgoromeditse	<-kgorometsa >	'I have pushed'

The high verb stems in (18) show evidence of the application of the lexical HTS rule through which the high tone has been spread one TBU to the right (unless that syllable is in final position). Now, if perfective forms of high verbs occur phrase-medially, we find that high tone appears to spread all the way to the last syllable; cf. (19). An explanation of this phenomenon becomes possible when we examine the behavior of toneless verbs in the same context; cf. (20).

(19) High

ke-jélé nama	'I have eaten the meat'
ke-rékílé nama	'I have bought the meat'
ke-rékísítsé nama	'I have sold the meat'
ke-khúrúmédítsé nama	'I have covered the meat'

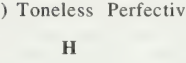
(20) Toneless Verbs in Perfective

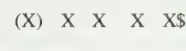
ke-welé seriti	'I have lost my dignity'
ke-lemílé tshimo	'I have ploughed the field'
ke-fetótsé mogopolo	'I have changed my mind'
ke-kgorómédítsé mmatsale	'I have pushed my mother-in-law'

The verb stems in (20) bear high tones from the second syllable through the last, regardless of the length of the verb stem. Since the forms in (20) generally have no underlying high tones of their own, the conclusion is that there is a floating high tone which comes with the perfective tense. It is also apparent that the perfective high tone in addition excludes the first syllable of the toneless verb stem.

A comparison of the high and toneless verb stems in phrase-medial position leads to one of two conclusions: Either the floating perfective high tone docks on the last syllable of the verb stem and spreads leftward iteratively up to the second syllable, or it docks on the second syllable and then spreads iteratively to the right through the last syllable. At this point, there is no concrete evidence to choose between these alternatives. For the sake of the argument, let us assume that the floating high tone docks on the second syllable and spreads rightward as in (21). (The absence of the floating high tone when verbs are not phrase-medial will be discussed in §4.3.) The absence of a high tone on the initial syllable of the toneless verb stem in (21) is accounted for by the rule of Extratonality,[3] whereby some syllable, usually at an edge becomes invisible to a phonological rule. In this case, the initial syllable is excluded by the rule of Extratonality and is therefore shielded from the influence of the high tone of the perfective. Since this excluded syllable is now toneless, it becomes low-toned by the default low tone rule.

(21) Toneless Perfective Verb Stem





kgo ró mé dí tsé . . .

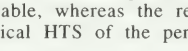
'pushed . . .'

($ indicates phrase-medial position)

It is now clear that the sequences of the high tones on the perfective stem do not constitute any OCP violations, since they result from a single high tone which, through grammatical HTS, has become a multiply-linked high tone (which is allowable in the framework of autosegmental phonology). However, the solution is not so clear when the high verb stems are considered.

Now, as the examples in (19) show, high verb stems also have high tones on the FIRST syllable. We can account for this high tone by attributing it to the presence of an underlying lexical high tone on that syllable, whereas the rest of the high tones are the result of the grammatical HTS of the perfective high tone. This is illustrated by in (22).

(22) High Perfective Verb Stems



khú rú mé dí tsé . . .

'covered . . .'

However, the facts in (22) raise problems for the OCP, since the sequence of high tones is a clear OCP violation. This problem is discussed in the next section.

4.2 The Perfective Tone and OCP Violations

A priori, the patterns in (22) can be accounted for by two different hypotheses:

Hypothesis A: The OCP holds at the lexical, but not at the grammatical level. This hypothesis is consistent with Odden's (1986, 1988) argument that the OCP should not be seen as a

universal principle, since it can be violated in the very languages that are claimed to observe it.

Hypothesis B: The cooccurence of verb-stem initial high tone with the grammatical floating perfective high tone does not present a genuine OCP violation, since the two high tones differ in their origin and behavior. This difference is schematically presented in (23), where bold **H** indicates grammatical high tone, while plain H stands for lexical high tone.

(23)
```
H                    Lexical High Tone
X  X  X  X
   H                 Perfective High Tone
```

I believe that Hypothesis B provides a better account for Setswana. First of all, note that the two types of high tone differ considerably in their behavior, even if we limit ourselves to the phrase-medial forms so far discussed: Lexical high tones are directly associated with particular MORPHEMES, while grammatical high tone is a floating tone, associated with a particular CONSTRUCTION (viz. the perfective). Lexical high tone spreads by HTS to just ONE following TBU, grammatical high tone spreads over ANY NUMBER of following syllables (up to the last one). For lexical high tone, the LAST syllable of the verb stem is extratoned for grammatical high tone, the FIRST syllable is extratonal.

4.3 The perfective tone in phrase-final position

The toneless perfective verb stems in phrase-final position do not display the sequence of high tones that are observed when the verb stem is in phrase-medial position as in (20), even though the morpheme of the perfective tense is present. Examples of the phrase-final forms are repeated here as (24).

(24) Toneless

ke-wele	<-wa >	'I have fallen'
ke-lemile	<-lema >	'I have ploughed'
ke-fetotse	<-fetola >	'I have changed'
ke-kgoromeditse	<-kgorometsa >	'I have pushed'

Since the perfective high tone that surfaces when the verb stem is in phrase-medial position is a morphological high tone, it is possible that the morphological high tone was present initially but failed to dock and was deleted by a rule of Perfective High Tone Deletion. This is illustrated in (25).[4] The corresponding pattern of high verbs is illustrated in (26).

(25) Toneless perfective in phrase-final position

H → ø

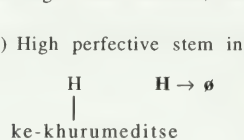
ke-kgorometitse Perfective High Tone Deletion
'I-pushed(PFT)'

(26) High

ke-jéle	<-já >	'I have eaten'
ke-rékíle	<-réka >	'I have bought'
ke-rékísitse	<-rékísa >	'I have sold'
ke-khúrúmeditse	<-khúrúmetsa >	'I have covered'

Here, too, there is no surface evidence for the perfective high tone. And as expected, the lexical high tone of the verb stem undergoes HTS one syllable to the right (unless that syllable is final). Assuming Perfective High Tone deletion, we can account for this pattern as in (27).

(27) High perfective stem in phrase-final position



Perfective High Tone Deletion, then, is a language-particular rule that deletes the perfective high tone when the verb stem is in phrase-final position. It is not an unusual rule, since it operates like other rules in this language. Neither is it an unusual rule for the theory of autosegmental phonology.

Now, let us look at phrase-final perfective verbs with high-tone subject prefixes; cf. (28).

(28) High

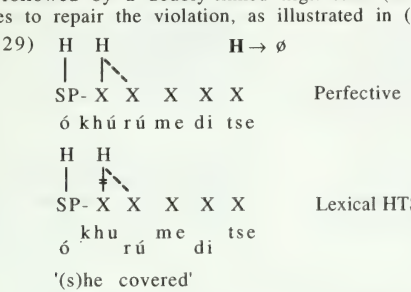
ó-jele[5]	<-já>	'(s)he has eaten'
ó-rekíle	<-réka>	'(s)he has bought'
ó-rekísitse	<-rékísa	'(s)he has sold'
ó-khurúmeditse	<-khúrúmetsa>	'(s)he has covered'

Toneless

ó-wele	<-wa>	'(s)he fell'
ó-lemile	<-lema>	'(s)he ploughed'
ó-fetotse	<-fetola>	'(s)he changed'
ó-kgorometitse	<-kgorometsa>	'(s)he pushed'

The high and toneless examples in (28) provide evidence that Perfective High Tone Deletion has applied to delete the perfective floating high tone. The presence of a second high tone on the high verbs is consistent with lexical HTS as formulated. The conclusion is that after Perfective High Deletion, which removes the high tones from the second syllable on up to the last giving rise to toneless syllables, lexical HTS becomes productive and spreads a high tone to the right. Because there is now a sequence of a singly-linked high tone followed by a doubly-linked high tone (an OCP violation) LBD applies to repair the violation, as illustrated in (29).

(29)

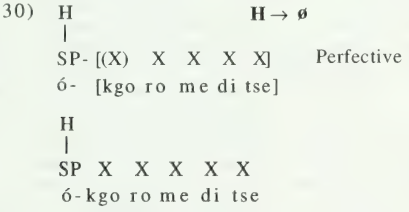


'(s)he covered'

The default low tone rule subsequently puts low tones on the rest of the toneless syllables in (29).

It is not clear, however, why the initial syllables of the toneless verbs do not surface with a high tone by HTS from the subject prefix high tone, as would be expected after Perfective High Tone Deletion. I suggest the following solution: As noted earlier, the introduction of the Perfective High Tone is accompanied by extratonality of the leftmost syllable of the verb stem.[6] This extratonality, then, prevents HTS from the preceding prefix and explains why toneless verbs have no high tone whatsoever on phrase-final perfective verb stems, even when preceded by high-tone prefixes.

(30)



'(s)he pushed'

Further problems arise when we examine high verbs in phrase-medial perfective structures preceded by high-tone prefixes. Compare the examples in (31a), with high tone on every syllable, from the prefix to the final syllable. In other words, there is a sequence of high tones associated, respectively, with the prefix, the first syllable of the verb stem, and the domain from the second to the last syllable of the verb stem. (No such problems are encountered in toneless verbs, for which see (31b).)

(31) a. High

ó-jélé nama	'(s)he ate the meat'
ó-rékílé nama	'(s)he bought the meat'
ó-rékísítsé nama	'(s)he sold the meat'
ó-khúrúmédítsé nama	'(s)he covered the meat'

b. Toneless

ó-welé seriti	'(s)he lost his/her dignity'
ó-lemílé tshimo	'(s)he ploughed the field'
ó-fetótsé mogopolo	'(s)he changed his/her mind'
ó-kgorómédítsé mmatsale	'(s)he pushed his/her mother-in-law'

(32)

Grammatical HTS

HTS

'(s)he covered (PFT)'

These structures seem to require a further limitation on the applicability of the OCP in Setswana: Potential Lexical violations of the OCP so far have been accounted for by the assumption of (a) HTS, (b) High Fusion, and (c) LBD and RBD. Of these processes, LBD and RBD by definition apply only to MULTIPLY-linked sequences of high tones that result from HTS or High Fusion. There is nothing in the rules that are needed to postulate so far that eliminates SINGLY-linked sequences (except for the morphologically restricted High Fusion). This suggests that Setswana has a constraint against multiply-linked sequences of high tones, but not against singly-linked sequences and that, therefore, the OCP needs to be further parameterized to allow sequences of singly-linked high tones.

In conclusion, there is no OCP violation in the high verb stems in (31). The rules apply as predicted in the case of the toneless verb stems in (31), namely, the perfective floating high tone surfaces on the second syllable as predicted and it spread iteratively to the last syllable. The high tone from the prefix is prevented from spreading a

high tone to the toneless initial syllable of the toneless verbs, probably because this syllable has already been rendered extratonal and subsequently low-toned in its participation in the perfective tonal rules. It is evident now that the two high tones are separated by a low tone. This is a well-formed structure which is not violating the OCP. LBD could not have produced this tonal pattern as the high tones are different. These facts are structurally presented in (33).

(33) H H

SP (X) X X X X$ Initial Extratonal;
ó-kgo ró mé dí tsé . . . Grammatical HTS
'(s)he pushed (PFT)'

H L H

SP X X X X X$ Default Low Tone
ó-kgo ró mé dí tsé . . .
'(s)he pushed'

5. Interaction of the object prefix high tone with the perfective High Tone

The examples in (34) show the tonal patterns of the perfective high verb stems after a toneless subject prefix in phrase-final position. Note that the high tone of the object prefix and that of the verb stem form a sequence in apparent violation of the OCP; cf. the schematic presentation in (35).

(34) After a toneless subject prefix

High

ke-é-jéle	'I have eaten it'
ke-é-rékíle	'I have bought it'
ke-é-rékísitse	'I have sold it'
ke-é-khúrúmeditse	'I have covered it'

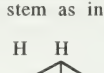
(35) H H

X X X X X X

SP OP khú rú me di tse HTS
'I it covered'

Note however that as appeared in section 3, high-tone object prefixes and high verb stems are subject to High Fusion which fuses the high tone of the object prefix with the lexical high tone of the immediately following verb stem as in (36).

(36)



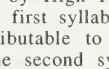
X X X X X X High Fusion
SP OP khú rú me di tse
'I it covered'

The examples in (37) show the tonal patterns of the high verb stems after an object prefix when the verb stem is in phrase-medial position. Note the sequence of high tones from the object prefix through the last syllable of the verb stem.

(37) ke-**é**-jélé ... 'I ate it ...'
ke-**é**-rékílé ... 'I bought it ...'
ke-**é**-rékísítsé ... 'I sold it ...'
ke-**é**-khúrúmédítsé ... 'I covered it ...'

Structures like these, again, may appear to be violations of the OCP. But, again, they can be shown not to be genuine violations. The high tones on the prefix and the first syllable of the verb stem can be accounted for by High Fusion of LEXICAL high tones of the object prefix and the first syllable of a high verb; the remainder of the high tones are attributable to the GRAMMATICAL perfective high tone docking on the second syllable of the verb stem and spreading from there to the end of the word; cf. (38).

(38)



X X X X X X$ High Fusion;
SP- OP khú rú mé dí tsé . . . Grammatical HTS
'I it covered'

6.0 Conclusion

In this paper, I have argued that, contrary to Odden (1986, 1988) the OCP can be maintained to be a valid principle for Setswana. Apparent violations can be accounted for by (a) limiting the OCP to sequences involving multiply-linked high tones; (b) permitting High Tone Fusion under certain morphologically conditioned circumstances; and (c) distinguishing between lexical and grammatical high tones. While the OCP does not operate on multiply-linked sequences of lexical and grammatical high tones, it does apply

to multiply-linked sequences of lexical high tones, where Left Branch Delinking and Right Branch Delinking eliminate possible violations. These facts suggest that the OCP may be a universal principle which, however, may be parametrically constrained in languages like Setswana.

NOTES

[1] Setswana does have a low-toned object prefix, but that prefix will not be addressed in this paper since it does not trigger tonal patterns that are relevant to the phenomena under discussion. This low object prefix is rarely attested in the speech of Setswana speakers.

[2] This matter and other details about the object prefix of Setswana are discussed in greater detail in Kisseberth & Mmusi Forthcoming.

[3] For a detailed description of this rule, see Mmusi 1991.

[4] Here as elsewhere, high tones that fail to dock are placed over the last syllable of the verb.

[5] The preferred form is ó-jelé; in this particular morphological category, final extratonality is optional. For further details see Mmusi 1992, chapter 3.

[6] Presumably, this rule takes place in the LEXICON, when the perfective morpheme is suffixed to the verb stem. This may suggest that the distinction in this paper between 'lexical' and 'grammatical' high tone is spurious. However, the distinction clearly is needed. It can be justified if we assume that 'lexical' and 'grammatical' high tones are assigned to different lexical levels within the lexical phonology.

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TRUNCATION PROCESSES IN SPANISH[1]

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This paper describes in detail processes of Hypocoristic Formation and Noun Truncation in Peninsular Spanish. This process displays an unusual optionality in some truncated forms. I argue that in order to analyze the process as a unified operation one needs the syllabic trochee acting as a template, with an optional condition that the second syllable be light. Another interesting characteristic of the type of truncation described is that syllabicity is copied in the process. Following McCarthy and Prince's (1988) hypothesis, the fact that syllabicity has to be marked in the Spanish lexicon (Harris 1989, Hualde 1991) determines that syllabicity will be transferred in the process.

1. Introduction

Recent studies in prosodic morphology (McCarthy & Prince 1988, 1990, Forthcoming) have convincingly argued that certain prosodic categories such as the foot, the syllable, and the mora can act as templates in morphological areas such as reduplication or truncation processes. The way one can constrain the copying process, as well as the role of the so-called 'transfer' from the base to its copy, are topics of current debate.

The focus of this paper is to describe in detail the productive processes of Spanish Hypocoristic Formation and Noun Truncation, which can offer new data on some of the issues discussed in Prosodic Morphology.

One of the interesting facts of Spanish Hypocoristic formation is that in some special cases truncated forms are optional, following what seems to be an accommodation to two different templates. I argue that in order to give a unified analysis of the data at hand one needs to recognize the following processes of template matching. On the one hand, Spanish truncation phenomena make use of a circumscription process that delimits the extent of the base to two syllables. On the other hand, the basic template corresponds to a syllabic trochee (or a sequence of two syllables of any weight with stress on the first) which has a further 'optional' condition that the second syllable in this template be light. Finally, as McCarthy and

Prince (1988, Forthcoming) predict, underlyingly marked syllabicity properties of the base are transferred.

2. Data

The present description is based on the Peninsular Spanish dialect as spoken in different cities across Spain.[2] Basically, Hypocoristic Formation and Noun Truncation consist in copying the first two syllables of the base name — with some interesting restrictions that are presented below, and movement of the stress to the first syllable, forming what we might call a 'trochaic pattern'.

Cases of the most productive type of hypocoristic formation are presented in (1).[3] The data are divided by syllable types that refer to the first two syllables of the base, as follows: HH=Heavy-Heavy; HL=Heavy-Light; LL=Light-Light and LH=Light-Heavy. Heavy syllables are of the type (C)VC, (C)VG, (C)GV, (C)GVC and (C)VGC (where C=consonant, V=vowel, G=glide). Light syllables are of the type (C)V. The base names and truncated hypocoristic forms are provided in orthographic forms with the relevant stress pattern and syllable structure of the base and the truncated form marked). As we can see in (1), if the first two syllables of the base are light, both are completely copied and the stress of the truncated form shows up on the first syllable:

(1) Spanish Hypocoristic Formation

Syllable-type	Base form	Truncated form
LL	Jo.sé	Jó.se
	Te.ré.sa	Té.re
	Je.re.mí.as	Jé.re
	Te.o.dó.ro	Té.o
	Re.mé.dios	Ré.me
	Ma.rí.a	Má.ri
	Do.ló.res	Dó.lo
	So.le.dád	Só.le
	Ra.fa.él	Rá.fa
	E.du.ár.do	É.du
	A.lí.cia	Á.li
	Be.a.tríz	Bé.a

Similarly, if the first syllable is heavy and the second is light, both are entirely copied, as we can observe in (2):

(2) Syllable-type	Base form	Truncated form
HL	Mar.ga.rí.ta	Már.ga
	Sal.va.dór	Sál.va
	Mont.se.rrát	Mónt.se
	Ig.ná.cio	Íg.na

Dio.ni.sio	Dió.ni
Al.fré.do	Ál.fre
Ger.trú.dis	Gér.tru
Cris.tí.na	Crís.ti
En.rí.que	Én.ri
In.ma.cu.lá.da	Ín.ma

However, if the second syllable of the base is heavy (either in LH or in HH forms), there is optional variation across speakers; while some forms copy the entire second syllable, others just take the first vocalic segment. Even the same speaker can accept both forms. In (3) I reproduce only the responses that were obtained in a questionnaire, without claiming that alternatives not listed are unacceptable.

(3) Syllable-type	Base form	Truncated form
LH	Da.niél	Dá.ni
	Ro.dól.fo	Ro.do ~ Ró.dol
	Mi.guél	Mí.gue ~ Mí.guel
	Ro.bér.to	Ró.ber
	Ja.viér	Já.vi
	Ri.cár.do	Rí.ca ~ Rí.car
	Je.sús	Jé.su ~ Jé.sus
	A.drián	Á.dri
	Flo.ren.tí.na	Fló.ren
	Lo.rén.za	Ló.ren
	Pru.dén.cio	Prú.den
	Jú.lia	Jú.li
	Da.víd	Dá.vi
	Ro.bér.to	Ró.ber
	Va.len.tín	Vá.len
	Ga.briél	Gá.bri
	Ma.tíl.de	Má.ti
	Pru.dén.cio	Prú.den
	Ma.nuél	Má.nu
	Vi.cén.te	Ví.cen
HH	Ar.mán.do	Ar.ma ~ Ar.man
	Fer.nán.do	Fér.na ~ Fér.nan
	Ber.nár.do	Bér.na ~ Bér.nar
	Fran.cís.co	Frán.cis
	Al.bér.to	Al.ber
	Con.cep.ción	Cón.ce
	Al.fón.so	Al.fon

However, there is one general restriction: Truncated forms with heavy second syllables are restricted to structures ending in one of the consonants that commonly occur at the end of words with

penultimate stems, viz. [r, s, n, l],[4] as in *cántas* 'you sing', *cántan* 'they sing', *árbol* 'tree', *cárcel* 'prison'. Structures ending in a consonant not permitted or rare in that context, such as **Cón.cep* or **Dá.vid* from *Con.cep.ción* or *Da.víd* are not acceptable.

Another observation is that the high glides present in the second syllable of the base appear as vowels in the second syllable of the truncated form (cf. from *Ja.viér* [xa.bjér], [xá.bi]; from *Da.niél* [da.njél], [dá.ni]). In the first syllable, however, glides are retained (cf. from *Dio.ní.sio* [djó.ni], **[dí.o]*). Elsewhere, the syllabification of the base is mantained: such that while *Ber.nár.do* can truncate to *Bér.nar*, *Mar.ga.rí.ta* cannot yield **Már.gar*. Finally, onsets are generally copied in their entirety, no matter how many consonants they have.[5] In sum, we can observe that all truncated forms copy the entire first syllable of the base, no matter whether the syllable is heavy or light. Yet, we observe some differences in the mapping of the second syllable when this is heavy. Here, speakers optionally make the second syllable light in the truncation process (cf. from *Ri.cár.do*, *Ríca* beside *Rí.car*; but from *Da.niél, Dáni*).

In order to support the claim that there is a tendency across speakers to allow the consonants [-r, -s, -n, -l] to appear as the last consonant of the truncated hypocoristics I asked seven speakers to fill a questionnaire with the nonsense forms in (4). I asked them to imagine that these were Spanish proper nouns and to truncate the forms. In what follows I report the answers provided and the number of speakers that gave the form in parentheses:[6]

(4) Truncation of nonsense forms

/-n/	Ca.rán.cia	Cá.ran (5); Cára (2)
	Su.lén.ca	Sú.len (6); Sú.le (1)
	Im.prán.ca	Im.pran (5); Im.pra (2)
	Sol.tán.ca	Sól.tan (4); Sól.ta (3);
/-r/	Su.bér.ta	Sú.ber (4); Sú.be (1); Bér.ta (2)
/-l/	Si.rál.do	Sí.ral (4); Sí.ra (3); Al.do (1)
	Co.rál.da	Có.ral (6); Có.ra (1)
	Ar.tál.do	Ár.tal (5); Ár.ta (2)
	Mar.tól.da	Már.tol (3); Már.to (4)
/-s/	Ci.rés.da	Cí.res (4); Cí.re (3)
	Con.rás.da	Cón.ras (2); Cón.ras (5)
/-m/	Si.nám.pa	Sí.nam (4); Sí.na (2)
	Pan.tám.ba	Pán.tam (2); Pán.ta (4); Pán (1)
/-jV/	Ton.mié.lo	Tón.mi (5); Ton (1)
	Ta.mié.la	Tá.mi (6); Tá.mie (1); Mié.la (2)
/-wV/	Mi.ráu.la	Mí.ra (7); Ráu.la (1)
	Cas.táu.la	Cás.ta (6)

/-ns/	Ti.néns.po	Tí.nens (2); Tí.nen (4); Tí.ne (1)
	Pul.máns.po	Púl.man (5); Púl.ma (1)
/-p/	Co.ráp.to	Có.ra (7)
	En.ráp.to	Én.ra (6); Ráp.to (1)
/-ps/	Su.léps.ta	Sú.leps (1); Sú.lep (2); Sú.le (4)
	En.léps.ta	Én.lep (1); Én.le (4); Léps.ta (2)
/-t/	Ri.cát.no	Rí.ca (7)
	Con.cát.no	Cón.cat (1); Cón.ca (6)
/-d/	A.mád.vo	Á.mad (1); Á.ma (6)
/-k/	Con.véc.to	Cón.vec (1); Cón.ve (4); Véc.to (3)
	Si.véc.to	Sí.vec (1); Sí.ve (6); Véc.to (1)
/-g/	Cu.rág.no	Cú.rag (1); Cú.ra (6)
	Ren.tág.no	Rén.ta (7)
/-θ/	Ro.séz.no	Ró.se (6); Ró.sez (1)
	Se.ráz.go	Sé.raz(2); Sé.ra (4)
	Cun.táz.go	Cún.ta (6); Táz.go (1)
	So.léz.do	Só.lez (1); Só.le (6)

Looking at the answers displayed in (5) we can see that there is a consistently higher acceptance of word-final /-l, -n, -r, -s, -m[7]/ than of other final consonants. The pattern above clearly correlates with the number of real paroxytones one can find with the corresponding final consonants in Spanish, as shown in (5):

(5) Number of paroxytones (based on Stahl & Scavnichy 1973)

/-n/	all verbs in the third person plural form 60 words
/-r/	63 words
/-l/	102 words
/-s/	all regular plurals; all second person singular and first plural verbs more than 500 words
/-m/	25 words
/-p/	0 words
/-t/	4 words
/-d/	3 words
/-k/	0 words
/-g/	0 words
/-θ/	2 words and some surnames[8]

This supports the claim that a phonotactic filter prevents the attachment of the coda consonant in the second syllable.

Another productive process of Noun Truncation, exemplified in (6), has exactly the same characteristics, except that there is almost no variation in the responses obtained across speakers for a given item. While the first syllable is always copied as heavy or light (as in the base), the second syllable can be forced into a light syllable or

not. Compare, for example, *hi.per.mer.cádo, hí.per* — with final [-r] — and *in.for.ma.ción, ín.fo* — with no [-r] —. Again, in some cases the second syllable has to be light due to phonotactic pressure (from *di.rec.tór, dí.re*, and not **dí.rec*):

(6) Spanish Noun Truncation

Syllable type	Base form	Truncated noun	
LL	te.le.vi.sión	té.le	'television'
	u.ni.ver.si.dád	ú.ni	'university'
	bo.lí.gra.fo	bó.li	'pen'
	mo.to.ci.clé.ta	mó.to	'motocycle'
	vi.ce.pre.si.dén.te	ví.ce	'vicepresident'
	pre.si.dén.te	pré.si	'president'
	pro.fe.sór	pró.fe	'professor'
	se.ño.rí.ta	sé.ño	'lady'
	po.li.cí.a	pó.li	'police'
HL	dis.co.té.ca	dís.co	'discotheque'
	au.to.mó.vil	áu.to	'car'
	com.pa.ñé.ro	cóm.pa	'fellow'
LH	di.rec.tór	dí.re	'director'
	te.nién.te	té.ni	'lieutenant'
	su.per.mer.cá.do	sú.per	'supermarket'
	hi.per.mer.cá.do	hí.per	'big supermark.'
	po.lio.mie.lí.tis	pó.lio	'poliomyelitis'
	bi.blio.té.ca	bí.blio	'library'
HH	in.for.ma.ción	ín.fo	'information'
	sar.gén.to	sár.gen	'sergeant'

2. Spanish truncation templates

It is clear that the stress pattern created in Spanish truncation processes coincides with a trochaic foot, that is, a sequence of a prominent syllable plus a weak syllable. Recent research in foot typologies (Hayes 1985 Forthcoming) has observed that trochaic feet found across languages are not weight sensitive, that is, that 'the initially-accented feet consist of units roughly equal in duration'. Thus, according to the above typology, trochaic feet can be of two possible types, namely, syllable-based (HH, LL, HL or LH) or mora-based (either LL or H):[9]

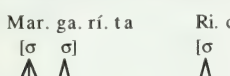
(7) Inventory of feet

Syllabic trochee: two syllables of any weight (σσ)
Moraic trochee: two light syllables or one heavy (μμ)
vs. Iamb: two syllables with first light and second heavy

For the Spanish truncation cases, where the speaker copies the entire first two syllables of the base, the syllabic trochee would be an

adequate template (with the proviso that one take the first two syllables of the base first), as we can see in (8):

(8) Mapping to a syllabic trochee from left-to-right



Yet, as we saw in the preceding section, the other possibility across speakers was to make the second syllable light. (*Ri.cár.do* and *Fer.nán.do* were optionally *Rí.ca* and *Fér.na* instead of *Rí.car* and *Fér.nan*.) This alternative pattern cannot be accounted for by a syllabic trochee template since, as seen in (7), such a template imposes no restrictions on syllable weight, either on the first syllable or the second. A possible way out would be to consider that the final consonant of the second syllable becomes extrametrical in the process of mapping.[10] This approach would work in the case in which the second syllable is of the form CVC (cases such as *Rí.ca* and *Fér.na*). However, if the second syllable of the word is of the form CGVC, what is copied is not CGV, but CV, and the vowel in the second syllable corresponds to the first glide, as shown in (9). If the final consonant of the second syllable were extrametrical in *Da.niél*, for example, we would expect a truncated form such as **Dá.nie*, but we obtain *Dá.ni*. Moreover, note that **Dá.nie* or **A.dria* would be well-formed sequences in Spanish, since common words such as *ná.die* 'nobody', *có.pia* 'copy' have the same structure:[11]

(9)	Base	Truncated form	
	Da.niél	Dá.ni	*Dá.nie
	Ja.viér	Já.vi	*Já.vie
	A.drián	A.dri	*A.dria[12]
	Ma.nuél	Má.nu	*Má.nue

As noted before, the glides present in the second syllable of the base forms in (9) are not copied as such in the truncated form. This situation contrasts with the glides present in the first syllable, which remain glides in the copy (cf. *Dio.ní.sio* [djó.ni], *[dí.o]; *Eu.gé.nia* [éw.xe], *[é.u]).

Now, there seem to be two options in trying to account for the variation in the final consonant and the effects expressed in (9):

(a) Apart from the Syllabic Trochee, let us postulate as an alternative template a Loose Minimal Word composed of a Moraic Trochee [σμμ] plus a single minimal syllable [σμ] (that is [σμμ] + [σμ]). This has been proposed by Scullen (1992) for French Abbreviation

processes. This solution is technically equivalent to the postulation of an unbalanced HL trochee (or $[\sigma_{\mu\mu}\sigma_{\mu}]$, a structure not recognized in the foot typology of (7)[13]). However, this approach does not provide an explanation for why the first syllable can be either light or heavy (depending on the form of the base); the Loose Minimal Word template would predict that the first syllable would be forced to be heavy.

(b) An alternative would be to take as an optional template a group of two syllables $[\sigma] + [\sigma_{\mu}]$, that is, any syllable plus a light syllable. This is the approach taken by McCarthy and Prince (1990) for the analysis of the Classical Arabic noun. Yet, the postulation of a template of the type $[\sigma] + [\sigma_{\mu}]$ would require an extra-condition of stress on the first syllable in order to obtain a trochaic pattern.

Moreover, if one adopts the solutions just outlined as templates of Spanish Truncation, one has to give up on the possibility of unifying the analysis in terms of a unique template.

I propose instead that a proper analysis must return to the notion of the syllabic trochee as the proper template for Spanish truncation. But in order to account for variation of the type *Ro.bér.to* : *Ró.ber* beside *Ró.be*, the basic analysis has to be modified.

A priori this could be accomplished by assuming that the base is copied to the syllabic-trochee template without regard to the syllable structure of the base and that the copy is subject to an arbitrary convention that specifies the second syllable of the copy as optionally heavy (*Ró.ber*) or light (*Ró.be*). This analysis would be similar to that required for the Ilokano progressive proposed by Abad & Hayes 1989.

However, as noted earlier, names like *Mar.ga.rí.ta* only exhibit truncated forms of the type *Már.ga*. Truncated forms of the type **Már.gar* are not permissible. This suggests that the copying process is sensitive to, and retains, the syllable structure of the base (viz. *Már.ga.* ..., not **Már.gar.* ...). This restriction, too, has parallels elsewhere (cf. Mester 1990 on Japanese Rustic Girls' Names, as well as Clements 1985 and Steriade 1988).

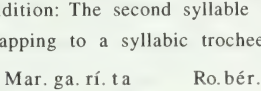
I propose the analysis in (10) which is based on the notion of Prosodic Circumscription developed in McCarthy & Prince 1990, a process of prosodic delimitation. Spanish truncation, then, requires the circumscription of the first two syllables of the base, together with their syllabic structure. This circumscribed base is mapped, from left to right, to a syllabic-trochee template. And an optional condition that the second syllable of the copy has to be light accounts for the variation *Ro.bér.to* : *Ró.ber* beside *Ró.be*. On the other hand, words of the type *Mar.ga.rí.ta* can only yield *Már.ga*, since the

copying process retains the syllabification of the circumscribed base. Compare the derivations in (11).

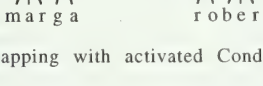
(10) Productive Hypocoristic Formation and Noun Truncation
Circumscribed Base: First two syllables of the word

Base: Full name or noun
Mapping: From left to right[14]
Template: Syllabic trochee: two syllables of any weight ([σσ])
Condition: The second syllable has to be light (optional)

(11) a. Mapping to a syllabic trochee (after circumscription)

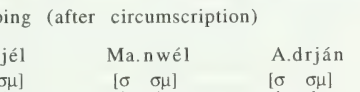


b. Mapping with activated Condition



The same analysis can be made to account for cases such as [dá.ni] from [da.njél], with obligatory application of the condition that the second syllable be light. This account is based on the assumption that rising diphthongs of the type [je], [ja], [we], [wa] constitute bimoraic syllables, that these are reduced to single-mora syllables by deletion of the vowel, and that subsequently, the glides change into the corresponding high vowels. Compare the derivations in (12).

(12) Mapping (after circumscription)



Evidence that diphthongs of the type [je], [ja], [we], [wa] are bimoraic can be found in the fact that, just like falling diphthongs, they count as heavy syllables for the purposes of Spanish stress assignment. As Harris (1983:111) points out, 'antepenultimate stress is impossible if the penult is a closed syllable.' As a consequence,

bolígrafo 'pen' is an acceptable Spanish word, but forms such as **cáramba*, **cá.rrei.ra*, **sósjego* are not.

The fact that syllabicity is 'transferred' to the copy supports the view expressed by McCarthy and Prince (1988), who propose that only underlying distinctions are copied with the base. They argue that the fact that we can find glides copied from the original to the copy 'is no proof of transfer if the rules for determining syllabicity would have this effect anyway' (p.32). They further hypothesize that distinctive syllabicity will always be copied. A language like Spanish, then, where it is clear that glides and vowels have to contrast underlyingly (Harris 1989, Hualde 1991) is expected to copy lexical syllabicity in truncation processes. As we have seen, this is the case outlined for Spanish Truncation. Moreover, prosodic conservation (quantity or syllabicity conservation) seems to be the unmarked case in reduplication processes (see Clements 1985, Steriade 1988).

Finally, a type of Hypocoristic Formation in Italian seems to be the exact replica of Spanish (Thornton 1991). As in Spanish, the truncated cases copy the first two syllables of the base in a trochaic pattern, with the restriction that the second syllable has to be light:

(13) Italian Hypochoristic Formation (Thornton 1991)

	Base	Truncated Form
LL	E.do.ár.do	É.do
	Fe.de.rí.co	Fé.de
LH	A.ris.tó.te.le	Á.ri
	Da.nié.le	Dá.ni
HL	Vir.gí.nia	Vír.gi
	En.rí.co	Én.ri

However, while the case of Italian can be explained by appealing to phonotactic restrictions (almost all words in Italian end in a vowel), this is not the case for Spanish.

Another case which reminds us of the Spanish truncation phenomena consists in a type of loanword abbreviation formation in Modern Japanese (cf. Itô Forthcoming). Itô notes that the possible templates in this Japanese process are mainly bisyllabic, with the patterns exemplified in (14). Basically, as in Spanish, the abbreviated forms copy the first two syllables of the word in a trochaic pattern. Yet, while the first syllable is copied in its entirety (whether light or heavy), the second syllable is obligatorily shortened in light-heavy sequences (see (14 d.)). Presumably, the case of sandwich (heavy-heavy), which in Japanese gives the truncated form sán.du would be explained by the impossibility of having a word-final [tʃ] in Japanese (only /N/ is a final consonant in Japanese).

(14) Japanese Loanword Abbreviation

a.	LL	helicopter	héri	(LL)
		operation	ópe	(LL)
b.	HL	combination	kómbi	(HL)
		impotent	ímpo	(HL)
c.	HH	bartender	báateN	(HH)
		sandwich	sándu	(HL)
d.	LH	demonstration	démo	(LL), *démoN
		anarchist	ána	(LL), *ánaa

Note however that the conditions for the Spanish enforcement of light final syllables in truncated forms differ considerably from those of Japanese. Itô's analysis, therefore, is not applicable to Spanish.[15]

3. Conclusion and outlook

I have shown that the Spanish truncation process investigated in this paper is best accounted for as a mapping process to a syllabic-trochee template. Crucially, the copying process operates on a circumscribed base, consisting of the first two syllables of the base, with the syllabification of the base retained. Moreover, the analysis requires the assumption of a condition that forces the last syllable of the truncated form to be light, optionally in the majority of the forms, obligatorily in structures of the type [da.njél] : [dá.ni]. It is this process which makes it possible to assume that the syllabification of the base is retained in the copying process, in conformity with McCarthy & Prince's (1988) hypothesis.

These findings are significant in light of recent claims in Prosodic Morphology (McCarthy & Prince Forthcoming:56) that abbreviation patterns are to be analyzed as mapping to EXISTENT prosodic constituents of a given language. The fact that the proposed analysis postulates the syllabic trochee as the template for Spanish truncation therefore would suggest that the syllabic trochee must be an active foot in Spanish prosody. There is, in fact, independent evidence for this conclusion: According to Roca (1986), secondary stress patterns are based on syllabic trochees, without any reference to syllable weight.[16]

NOTES

[1] I thank Curtis Blaylock, Stuart Davis, Miguel Angel Galindo, Michael Kenstowicz, Alfons Morales and, above all, José I. Hualde for their helpful comments on earlier versions of this paper.

[2] I am indebted to the following people, who answered the questionnaire containing almost all the words discussed in the present paper: Ana Ardid, from Madrid; Teresa Cadierno, from Gijón;

Miguel Angel Domínguez, from Melilla; Ana Fernández, from Palencia; Pilar Figueras, from Girona; Miguel Angel Galindo, from Montejícar (Granada); Pere Gifra, from Barcelona; Montse Mir, from Barcelona; Isabel Pereira, from Madrid; Carles Pujol, from Madrid; and Juliana Ramos, from Salamanca. All informants are university students, between 20 and 35 years old.

[3] There is a much less productive way of constructing hypocoristics, and that is to copy the first two syllables of the base, changing the vowel of the second syllable to [-i] (cf. *Ar.mán.do > Ar.mi* ; *Ri.cár.do > Rí.qui* ; *Ro.bér.to > Ró.bi* ; *Ber.nár.do > Bér.ni* ; *Mi.guél > Mí.gui* ; *Pi.lár > Pí.li* ; *Su.sá.na > Sú.si*; *Do.ló.res > Dóli*). Another way of forming hypocoristics is to take the last two syllables of the base (cf. *Al.fré.do > Fré.do*; *Al.fón.so > Fón.so*; *Ro.bér.to > Bér.to*; *An.tó.nio > Tó.ni* , *Tó.ño*; *Cris.tí.na > Tí.na*). And indeed, we can find nonproductive hypocoristic forms that are limited to particular nouns and are not derivable through a productive process in the language (cf. *Je.sús > Chús*, *Chú.chi*; *Do.ló.res > Ló.les*; *Ma.rí.a Luí.sa > Ma.rí.sa*; *Ig.ná.cio > Ná.cho*, *I.ñá.qui*; *Ma.nó.lo > Lolo*; *Jo.sé Ma.rí.a > Jo.sé.ma*; *Ma.rí.a Te.ré.sa > Mái.te*; *Lo.rén.za > Chén.cha*; *En.rí.que > Quí.que*; *Con.cep.ción > Cón.cha*; *Fran.cis.co > Páco*; *José > Pépe*).

[4] Other consonants can occur, too, but they are much less common (cf. *cénit* 'zenith'; *bíceps* 'biceps'; *césped* 'grass'; *Pére[θ]* 'proper name'; *Míriam* 'first name').

[5] Although in some isolated forms we can find simplification of onsets (cf. *Ga.briél > Gá.bi*; *A.drián > Adi*).

[6] If the same speaker gave two possible forms I include them as part of the answers.

[7] As José Ignacio Hualde points out, the fact that [-m] is one of the most accepted vowels in proparoxytones is puzzling, since in most of the borrowings final [-m] becomes [-n] (cf. *álbum* [álbun], *ítem* [íten]). Even though all informants wrote final [-m] in their answers, one might think that they would pronounce these words with final [n].

[8] The following examples of paroxytones ending in /-t/ are given in the reverse dictionary consulted: *cénit* 'zenith', *ábsit* 'apse', *superávit* 'surplus', *accésit* 'consolation prize'. With final /-d/: *césped* 'grass'; *huésped* 'guest'; *áspid* 'asp'. And with final /-θ/: *lápiz* 'pencil', *cáliz* 'calyx' .

[9] For more arguments see also McCarthy & Prince Forthcoming.

[10] In contrast, iambic feet (weak-strong feet) are generally quantity-sensitive. According to Hayes (1985, Forthcoming:71) this

asymmetry is grounded in certain facts about human rhythm perception. What he calls the Iambic/trochaic Law is repeated in (i):

(i) Iambic/Trochaic Law

Elements contrasting in intensity naturally form groupings with initial prominence (trochaic feet)
Elements contrasting in duration naturally form groupings with final prominence (iambic feet)

[11] This possibility was pointed out to me by José I. Hualde.

[12] As Alfons Morales suggests, a possible way to maintain the extrametricality approach would be to argue that a sequence like **Dá.nie* (with final CGV) is ill-formed and would have to be corrected by deleting the last vowel. The difference between **Dá.nie* and *ná.die* 'nobody' would lie in their morphological composition. While **Dá.nie* is a non-derived root, *nad+ie* is a morphologically complex word (cf. *nád+a* 'nothing'). In other words, if the final sequence is a 'morpheme' it is accepted at the end of a GV sequence, but a final vowel which is part of the root is not accepted. This solution seems to be more stipulative than the one adopted here. Moreover, similar cases reviewed in this paper show no morphological sensitivity.

[13] The second template, the unbalanced trochee, not accepted in the typology in (7), can be considered as a restricted type of foot that, although it is not common across languages, can be operative in some cases such as the ones reviewed above. Some other special cases reviewed in the literature seem to call for similar prosodic solutions (see Jakobs 1991 and Kenstowicz Forthcoming).

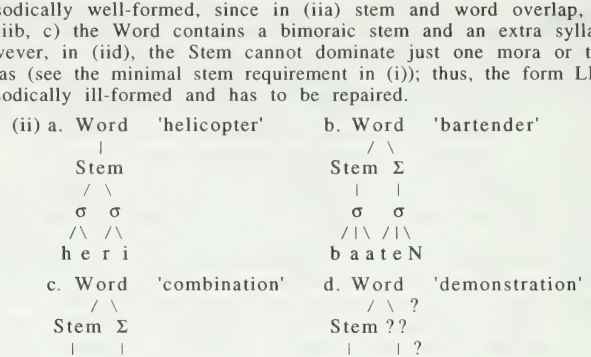
[14] This is the unmarked directionality for prefixation mapping (cf. McCarthy & Prince Forthcoming:11).

[15] Itô hypothesizes that the interaction between two prosodic categories, the Stem and the Word, explains why sequences such as light-heavy (but crucially, not heavy-heavy) are highly disfavored in Japanese truncation. Basically, these two prosodic categories have a minimal requirement stated in (i) below: while the minimal Stem is the bimoraic foot, the minimal Word has to be longer than a syllable:

(i) Minimal Prosodic Requirements in Japanese (Ito to appear:10)
Minimal Stem Requirement: Min (STEM) = F = [μ μ]
Minimal Word Requirement: Min (WORD) > σ

The first assumption of Itô's analysis is that 'every word contains a stem' and that 'a bisyllabic prosodic word must also properly contain the bimoraic prosodic stem'. Since Japanese is a suffixing language, the stem will be located at the left edge of the word. Given the above assumptions it is possible to rule out truncated words of the form light-heavy, as we can observe in (ii). The first three structures are

prosodically well-formed, since in (iia) stem and word overlap, and in (iib, c) the Word contains a bimoraic stem and an extra syllable. However, in (iid), the Stem cannot dominate just one mora or three moras (see the minimal stem requirement in (i)); thus, the form LH is prosodically ill-formed and has to be repaired.



The above explanation cannot be extended to Spanish Truncation, since in this language no distinction is made between the sequences heavy-heavy and light-heavy in truncated forms.

[16] Secondary stress patterns seem to disregard syllable weight: Secondary stress is assigned by constructing syllabic trochees from right to left, starting from the primary stress of the word (see Roca 1986 for arguments): And as we can see in the words in (i), secondary stresses are assigned without paying any attention to the presence or absence of consonants in the coda (crucially, compare a. and b.).

(i) a. *Constàntinópla* 'Constantinople'
b. *cònstantìnopléño* 'person from Constantinople'
c. *cònstantìnopòlizár* 'to become from Constantinople'
d. *cònstantìnopòlitáno* 'person from Constantinople'

Moreover, as Navarro-Tomás (1956:520-2) points out, trochaic rhythms have been used overwhelmingly in Spanish poetry, in a variety of different verse lengths. In contrast, dactylic rhythms or any other combinations of rhythms have played a very limited role in Spanish metrics.

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SQUIB

On the lexical/postlexical distinction: Vowel assimilation in Lekeitio Basque

José Ignacio Hualde and Gorka Elordieta

In the heyday of classical Lexical Phonology it was claimed that there were a number of test properties that distinguished lexical from postlexical rules. Lexical rules, which could apply within certain morphologically defined domains but not across word boundaries, could be subject to cyclicity and have lexical exceptions. Postlexical rules were supposed to apply across-the-board and be blind to any morphological or lexical conditions (see Archangeli 1985, Pulleyblank 1986:1-8, Kaisse & Shaw 1985, among others). The initial optimism among researchers about establishing such a clearcut distinction between two major types of rules or rule applications has diminished considerably as contradictory evidence has been steadily amassed. For instance, Kaisse (1985, 1990) and Odden (1990) argue that certain postlexical rules have properties that had been taken to characterize the rules of the lexical component. Kaisse's proposal is to distinguish two subcomponents within the postlexical phonology, which she names P1 and P2. P1 rules have essentially the same properties as lexical rules but, in addition, have access to syntactic information. P1 rules apply within certain well-defined syntactic configurations, but are insensitive to intonational breaks.

In this paper, we present a case of a rule that would form part of the P2 subcomponent in Kaisse's model, since it is sensitive to intonational boundaries, but that has other characteristics which are typical of lexical rules, such as a very limited domain of application (basically nominal and verbal inflection). The existence of processes of this type makes the lexical/postlexical distinction essentially vacuous. This process thus offers evidence that the whole conception of the organization of phonology embodied within the framework of Lexical Phonology is substantially flawed. Instead, we propose that rules with lexical and grammatical conditions can apply at any level in the phonology, including intonationally-parsed representations.

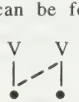
The process that we will examine is an optional rule of total vowel assimilation that assimilates /a/ or /e/ to an immediately preceding vowel in all features, in the Basque dialect of Lekeitio. In this dialect, the sequences to the left of the arrow in (1), which

correspond to a more careful or guarded style, may be realized as indicated to the right of the arrow in rapid or relaxed style:[1]

(1)	umia da	→ umii da	'it is the child'
	basúak dis	→ basúuk dis [basúutis]	'they are the forests'
	umien ama	→ umiin ama	'the child's mother'
	katuen platera	→ katuun platera	'the cat's plate'
	žo eben	→ žo oben	'they hit him/her'

The rule of total vowel assimilation that the examples in (1) illustrate can be formulated as follows:

(2)



The high vowels do not undergo the rule simply because they never occur in the relevant morphological contexts. As for /o/, it can be shown that it does not undergo assimilation:

(3) basúok dis → *basúuk dis 'they are the forests (prox.)'
umíon ama → *umíin ama 'the mother of the children (prox.)'

The application of total vowel assimilation is restricted to basically two contexts: Across the boundary introduced by nominal inflectional endings and between main verb and auxiliary. Elsewhere the rule does not apply. The rule is thus inapplicable inside a morpheme (4a), between stem and derivational suffix (4b), in compounds (4c), and generally across word boundaries, (4d):

(4) a. Morpheme internally

oe	→ *oo 'bed'
uel	→ *uul 'leather'
diabru	→ *diibru 'devil'
biar	→ *biir 'job'
teatro	→ *teetro 'theater'

b. Derivation

tontu-ágo	→ *tontuúgo 'more stupid'
donosti-árra	→ *donostiírra 'from Donosti (San Sebastián)'
listu-égi	→ *listuúgi 'too smart'

c. Compounding

buru-ándi	→ *buruúndi 'big headed'
seme-alábak	→ *semeelábak 'children (son-daughters)'
begi-érre	→ *begiírre 'red-eye'
soro-ántza	→ *soroóntza 'mad look'

d. Across word boundaries
ortu estua → *ortu ustua 'narrow field'
ori argiža → *ori irgiža 'that light'

In the application of the rule in nominal inflection, the target vowel always assimilates to a high vowel, due to the existence of a couple of likewise morphologically restricted rules which raise a stem-final non-high vowel before a vowel-initial inflectional suffix. These rules apply obligatorily and are ordered before the optional rule of total vowel assimilation:[2]

(5) a. /baso-a/ → basua → basuu 'the forest'
/baso-en/ → basuen → basuun 'of the forest'
/baso-en*/ → basúen → basúun 'of the forests'
/baso-on*/ → basúon 'of the forests (prox.)'
/ume-a/ → umia → umii 'the child'
/ume-en/ → umien → umiin 'of the child'
/ume-en*/ → umíen → umíin 'of the children'
/ume-on*/ → umíon 'of the children (prox.)'

b. /neska-a/ → neskia → neskii 'the girl'
/neska-en/ → neskien → neskiin 'of the girl'

c. /buru-a/ → burua → buruu 'the head'
/buru-en/ → buruen → buruun 'of the head'

The rules illustrated in (5) are, first, a rule of mid-vowel raising that raises stem-final /e/ to [i] and /o/ to [u] immediately before another vowel in inflectional contexts, and, second, a rule that raises stem-final /a/ to [i] only in the singular (in the plural, stem-final /a/ is lost; e.g. /neska-en*/ *nésken* 'of the girls'). It is also possible to conceive of this second rule as raising /a/ to /e/, which finally becomes [i] by mid-vowel raising.

The application of the rule of total assimilation in verbal sequences, where the rules of mid-vowel and low-vowel raising do not apply, shows us that total assimilation can indeed apply when the trigger of the rule is a mid or low vowel, and not only when it is high. In this context, total vowel assimilation can be fed by another rule that deletes intervocalic stem-final /n/ in perfective participles with this ending:

(6) /ža-n eban/ → ža eban → ža aban 's/he ate'
/žo eban/ → žo eban → žo oban 's/he hit him/her/it'
/apur-tu eban/ → apurtu eban → apurtu uban 's/he broke it'
/ikus-i eban/ → ikusi eban → ikusi iban 's/he saw him/her/it'

Outside of these two morphosyntactic contexts, total vowel assimilation applies only with the superlative suffix /-en*/. This is a rather curious exception, since other suffixes of a similar semantic and morphological nature such as the comparative /-ago*/ and the excessive /-egi/ do not undergo the rule:

(7) /tonto*-en*-a/ → tontuéna → tontuúna 'the most stupid one'
/tonto*-ago*-a/ → tontuagúa → *tontuugúa 'more stupid'
/tonto*-egi*-a/ → tontuegíža → *tontuugíža 'too stupid'

The superlative is phonologically identical to the genitive plural. We want to propose that this is the reason that it undergoes a rule that inflectional morphemes undergo. The superlative is the same lexical entity as the genitive plural. This is similar to the notion of readjustment rule in Halle 1991:

(8) Superlative → genitive plural

The restrictions observed in the domain of application of total vowel assimilation are what one would expect of a lexical rule. It should be noted, however, that main verb and auxiliary, between which the rule applies, do not constitute a morphological word. There is plenty of evidence for the morphological independence of the auxiliary with respect to the main verb. For one thing, some elements can intervene between main verb and auxiliary; for another, the auxiliary is preposed in negative sentences:

(9) a. žo eban 's/he hit him/her/it'
b. žo egin eban 's/he did hit him/her/it'
c. es eban žo 's/he did not hit him/her/it'
d. es eban mutilla žo 's/he did not hit the boy'

The fact that the auxiliary behaves in the same way as the nominal inflectional suffixes with respect to the rule of total vowel assimilation, as well as the fact that it triggers certain idiosyncratic rules, such as the deletion of the final /-n/ of a preceding main verb, can be seen as arguments for considering that some sort of cliticization takes place between main verb and auxiliary when they are syntactically contiguous. There is no standard account for cliticization within the theory of classical Lexical Phonology, but a number of solutions have been proposed, including reversion to the lexicon (Pranka 1983, Pulleyblank & Akinlabi 1988, Hualde 1991) and the existence of an early postlexical stratum with many of the properties of the lexical component (Kaisse 1990).

But our rule has another property which clearly indicates that this is a very late rule, using the temporal metaphor of Lexical Phonology. This property is that the rule is sensitive in its application to intonational boundaries. Total vowel assimilation cannot apply if

the target syllable immediately precedes a pause or strong intonational break:

(10) a. žon gure umia da → žon gure umii da 'Jon is our child'
žon da gure umia → *žon da gure umii 'Jon is our child'

b. liburúak žonek daukos → liburúuk žonek daukos
'Jon has the books'
žonek daukos liburúak → *žonek daukos liburúuk
'Jon has the books'

c. [barristu egingo dabela plasan dagoen etxia/*etxii]
renovate do.fut AUX.that square.in is.rel house
esan eben
say AUX
'They said that they would renovate the house that is on the square'

These examples show that the morphological conditions are necessary but not sufficient in order for the rule of total assimilation to apply. In addition there is a prosodic condition: The syllable containing the target vowel cannot be placed immediately before an intonational break. This is a condition to which only late postlexical rules are supposed to show sensitivity. That is, in spite of its restricted morphological domain, total vowel assimilation applies postlexically; in fact, it would have to be classified as a P2 rule in Kaisse's model.

Our conclusion is that across-the-board application is not a necessary characteristic of late postlexical rules. Rather, rules restricted in their domain of application to very limited morphological contexts may apply at the postlexical level. This implies that, against the claims of classical Lexical Phonology, morphological information about boundaries and grammatical categories is not erased upon concatenation, but rather remains available at all levels.

NOTES

[1] The data in this paper are based on the native intuitions of one of the authors (Elordieta) as well as on observation of several other Basque speakers from Lekeitio. The transcription system that is used follows common Basque conventions, except that the prepalatal voiced fricative found in the Lekeitio variety, for which there is no standard Basque symbol, is represented as *ž*. The following equivalences are to be noted: *tx* = prepalatal voiceless affricate, *ll* = palatal lateral, *rr* = rhotic trill. Other symbols have their usual values.

[2] An asterisk following a morpheme in underlying representation indicates that the morpheme is accented. Accented morphemes assign prominence to the penultimate syllable of the word containing them. Other words are unaccented and do not show prominence on any syllable, unless they are focalized or in phrase-final position, in which case they receive final prominence.

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REVIEW

Nanette Twine: Language and the modern state: The reform of written Japanese. (The Nissan Institute/Routledge Japanese Studies Series) London: Routledge, 1991; pp. xiii, 329, US $79.95.

Yasufumi Iwasaki

1. *Language and the modern state* is one of the books in The Nissan Institute/Routledge Japanese Studies Series, which seeks, in the words of the general editor, to 'foster an informed and balanced — but not uncritical — understanding of Japan' (xi). The volume examines Japan's language modernization as a process whereby a modern colloquial style was developed in the context of the overall social, educational, and economic modernization of Japan. It details the 'revolutionary reform' (257) in written Japanese undertaken during the period 1866-1946, focusing mainly on the Meiji (1868-1912) and the early Taishō (1912-1926) Periods.

2. At the beginning of Japan's modern age, there was no single all-purpose written language simple enough to be understood by all literate Japanese. In order to involve the entire nation in modernization, it was imperative to develop a uniform style of writing based on the grammar and vocabulary of a standard form of the spoken language and hence comprehended by any literate Japanese. This reform was initiated, not by the government, but by progressive intellectuals including educators, political activists, bureaucrats, journalists, linguists, and novelists, most of whom were strongly influenced by European languages. Overcoming the resistance of their peers to a colloquial style of writing based on the contemporary speech was a formidable task.

3. The Introduction, presenting a brief outline, is followed by Chapter 1 ('Language and modernization: The Japanese experience', 6-32), which discusses language modernization in general and the background to the problem of language modernization in Japan. To modernize a language means changing it so that it becomes 'capable of acting as a facilitator for the involvement of the populace as a whole in the social transformation being undertaken' (7). There are four major elements in language modernization: stylistic reform (cf. Chapters 3-7), standardization (cf. Chapter 8), orthographic reform (cf. Chapter 9), and lexical expansion. Four main factors which led to

language modernization in Japan were the urgency of disseminating new knowledge from abroad through formal education, the need to expedite the flow of information (e.g. through mail and the press), the importance that activists in *jiyū minken undō* (civil rights movement) attached to mass political education, and the Japanese novelists influenced by western literary theories.

Chapter 2 ('Pre-modern styles', 33-73) describes in detail the history, characteristics, and domains of use of the four major literary conventions at the beginning of the Meiji Period: *kambun* (Sino-Japanese), *sōrōbun* (epistolary style), *wabun* (classical Japanese), and *wakankonkōbun* (Japanese-Chinese blend). These conventions had to be changed for two reasons. First, they were intrinsically difficult, because they were divorced from contemporary spoken Japanese. Second, they mirrored the ingrained belief of intellectuals that writing was an artistic endeavor with content subordinated to form.

Chapter 3 ('Early stirrings: Education and the press', 74-107) discusses the initial moves toward stylistic reform in two major areas, education and the press. The stylistic reform movement was known as *gembun'itchi* (uniting speech and writing) movement in Japan.

Chapter 4 ('Language and politics', 108-131) focuses on the role in language reform of popularizers of western political thought (e.g. Ueki Emori, Katō Hiroyuki). These popularizers brought to light the limitations of the pre-modern, class-bound style in mass-oriented politics and lessened traditional antipathy against writing based on the spoken form.

Chapter 5 ('The role of literature', 132-162) discusses the pivotal role played by a crop of new, young novelists influenced by western literary theories and motivated by a desire to create realistic fiction in a serious attempt to depict the human psyche and environment. They modeled colloquial style for an intellectual readership and polished it into a medium acceptable to that readership, thereby dispelling the fears of those who saw only deficiencies in colloquial style and paving the way for the eventual spread of the new style to other areas.

Chapter 6 ('The final stages', 163-183) examines the later developments between the Sino-Japanese War (1894-95) and 1946, when colloquial style finally replaced its literary precursors completely. The most significant event occurred in 1902, when the government set up a body to approve and implement what had been already achieved by the *gembun'itchi* movement.

Chapter 7 ('The opposition', 184-206) discusses the main arguments against colloquial style and its major alternatives (e.g.

futsūbun (general style), *wakan'yō* (Japanese-Chinese-European style)). *Futsūbun* adhered to the Classical Standard rather than Colloquial Standard and was a viable alternative. Although it lost to the colloquial style, its emphasis on simple vocabulary probably helped weaken the anti-colloquial prejudice among intellectuals.

Chapter 8 ('The standardization debate', 207-223) deals with the standardization of written language, a prerequisite for the success of colloquialization of writing, and shows how the speech of educated people in Tokyo came to be the standard language.

Chapter 9 ('The problem of orthography', 224-256) discusses script reform and the development of a system of punctuation. For script reform, three main proposals were advanced: limiting the number of *kanji* (Chinese) characters, using only *kana* (Japanese syllabary writing) and using only *rōmaji* (Roman alphabet). The least radical one (i.e. limiting the number of *kanji* characters) was eventually adopted. As far as punctuation was concerned, Japanese texts were either sketchily punctuated or not punctuated at all, and the development of a punctuation system was induced by western punctuation, though not all western devices were adopted (e.g. inverted commas). As a result of these two reforms, written Japanese became much easier to understand.

The Conclusion, summarizing the major arguments of the book, is followed by an Appendix, which provides English translations of the cited Japanese passages, a Glossary, Notes, the Bibliography, and an Index.

4. The volume is undoubtedly based on extensive and in-depth research, of which the detailed notes and selected bibliography are indications. The appendix is invaluable to those who cannot read Japanese. The importance of the volume lies in the fact that it not only fosters an informed and balanced understanding of Japan, but also serves as a case study of language planning. However, it contains little discussion of the theoretical implications of the Japanese experience, which is one way to 'see what lessons, positive or negative, can be drawn for other countries' (xi).

Language planning is defined as 'an explicit and systematic effort to resolve language problems and achieve related goals through institutionally organized intervention in the use and usage of languages' (Christian 1988). Japan's 'language problems' were that the existing written language was a hindrance, not a facilitator, to smooth and rapid dissemination of information. The 'related goals' were the overall modernization of Japan. The Japanese experience corroborates the view that 'language planning takes place in a sociocultural context' (Cobarrubias 1983) and thus that 'language issues are only one part of the total language planning picture'

(Christian 1988). It also favors the 'socio-linguistic approach' discussed in Fasold (1984:250-251) over the 'instrumental approach' to language planning. One of the important findings of the book is the crucial interdependence between style reform, script reform, and standardization, the recognition of which came in the later stage of Japanese language reform. This fact should be given due consideration, though it may not be true of all instances of language planning. The relationship between various elements of language planning has not been dealt with so far (e.g. Ferguson 1968, Haugen 1983, Christian 1988, Haarmann 1990), and the volume testifies that 'much remains to be learned in language planning from case studies' (Cobarrubias 1983).

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REVIEW

Marina Yaguello. Lunatic lovers of language: Imaginary languages and their inventors. Translated by Catherine Slater. Rutherford, NJ: Fairleigh Dickinson University Press, 1991; pp. xvii, 223. US $39.50.

M. Lynne Murphy

In doing research on constructed languages, I have found that linguistics departments around the world are havens for artificial language junkies. Some of these folk pride themselves on knowing tidbits of terribly obscure languages from the last century, others have been card-carrying Esperantists, and a particularly interesting variety got their starts as linguists when they invented new languages as adolescents. Yet for all of this linguistic interest in constructed languages, relatively little is published on the topic. Certainly, studying constructed languages does not provide the same kinds of insights into the human linguistic capacity as the study of natural languages does. But could it give us different, and valuable, insights into the human mind? This is among the questions raised by Marina Yaguello's *Lunatic lovers of language*.

Originally published in French as *Les fous du langage: des langues imaginaires et de leurs inventeurs* (Paris: Éditions du Seuil, 1984), this translation is a valuable addition to the literature on constructed languages available to the English speaker. Y's research is remarkably broad and deep for such a short book, and many of the French sources and European constructed languages that she cites differ from those that are paraded again and again in the English language literature, revealing new avenues of inquiry for the curious scholar. Furthermore, Y has liberated herself from academic definitions of constructed languages. In addition to considering the philosophical and internationalist languages devised by scholars and self-described interlinguists, Y explores the boundaries between constructed and natural language, including the languages of schizophrenics, psychic media, and glossolalists (those who 'speak in tongues' due to religious possession). Comparing such unintentional language inventors with deliberate interlinguists leads Y to the conclusion that lunacy is a

motivating factor for language inventors. Her discourse on this topic is a bit fanciful, and while I encourage taking her conclusions with a grain of salt, they certainly make for interesting and entertaining reading.

In the introduction, Y outlines the purpose and limits of the book, giving the criteria she used for collecting languages and theoretical works in her research. She is mainly concerned with the relationship between the language and its creator and introduces her hypothesis that language inventors are 'linguistic lunatics'. The remainder of the book is divided into four sections and two appendices.

Part I, 'From myth to utopia', includes Chapters 1-3. Chapter 1, 'From austral to astral voyages: The founding myths', describes how myths fuel the creation of language. Stories of other worlds, questions regarding the genesis of language, and increased European interaction with non-European languages through imperialism (and subsequent conceptions and misconceptions of these languages) inspired language construction from the Reconstruction period. Chapter 2, 'The dreamer dreaming: Identikit picture of the linguistic lunatic', pursues a psychology of the archetypical logophile, with modi operandi for sub-types of this species. The language creator is characterized as a passionate dreamer, innocent of linguistic knowledge. In Chapter 3, 'Women outdreaming men: Female bodies, male science', Y explores why the classical language inventor is invariably a man, and why glossolalists are typically women. Here, Y walks the line between essentialism and socio-economic political analysis. She portrays men as intellectually-oriented and women as emotionally-oriented in their language creation. But in addition to such broad stereotypes, Y provides some analysis of the effects of sex and class membership on the language inventor's process.

Part II, 'Down the stream of time', follows the evolution of language construction from the 17th through the 20th century. In Chapter 4, 'The unended quest: The search for an ideal language in the 17th and 18th centuries', Y discusses the period's fictive utopian languages and attempts for a 'philosophical language' which would render thought and expression more rational than natural languages. In these ten pages, Y discusses several language constructors and theoreticians with reference to their historical context, noting the effects of trade with China, the grammar of Port-Royal, and religion and superstition on the imaginations of language creators. As is her strength, Y discusses more than just those authors familiar to the English language reader (Godwin, Leibniz, Wilkins), providing examples from the works of Denis de Varasse and Gabriel de Foigny. Chap-

ter 5, 'Science against fiction: The advance of the scientific spirit', describes the influence of philology and early linguistics on language construction trends. In this chapter, we see how new ideas (such as the arbitrariness of language) shift interest from the search for a perfect philosophical language to a concern for an internationalist language, and thus from a priori to a posteriori languages. Chapter 6, 'Myth at the heart of science: Modern linguistic theories as reflected in contemporary science fiction', carries us from Sapir-Whorf through the Chomskyan revolution in linguistics. Here, Y cites mostly English language authors and novels, including George Orwell's *1984*, Ian Watson's *The embedding*, and Samuel Delaney's *Babel 17*. Y's conception of Chomskyan linguistics is marked by its rather antiquated view of Deep Structure (circa 1965). However, this does not harm her analysis, as it is this view of Deep Structure that affected the work of Watson and Delaney.

Part III, 'At the two poles of linguistic fantasy', provides case studies of two very different language creators. In this section, Y continues to note lunacy in her subjects. Chapter 7, 'The emperor's new clothes: The case of Nicholas Marr', describes the life and work of the Georgian linguist, with special interest in his prediction that the languages of the world will synthesize into a single, universal tongue. Y's psychoanalysis of Marr is dramatic and worthy of some healthy skepticism, but her account of Marr's interaction with Stalin and his cult of personality is indeed interesting reading. Chapter 8, 'The Queen of the Night: Language and the unconscious: Spiritualist and religious glossolalia', discusses the case of Hélène Smith, a turn-of-the-century French spiritual medium, whose 'Martian' languages were recorded and studied by several psychologists. Y compares this case to present-day Pentacostalists, who speak 'in tongues' when allegedly possessed with the Holy Spirit. Y reveals some of the (presumably subconscious) methods of glossolalists by investigating the phonetics and syntax of the 'foreign' language in comparison to the speaker's native tongue.

In Part IV, 'In defence of natural languages', Y reflects on the roles and limitations of constructed languages. In Chapter 9, 'Sleeping Beauty still asleep: Artificial languages, prisons of the mind', and Chapter 10, 'The pull of opposing forces', Y reveals the circularity of arguments for constructed languages.

Two appendices account for almost half of the text (pp. 125-208). Appendix 1 is a very useful timeline of relevant points in the history of language invention. Parallel columns note the publication dates of theoretical and fictional works. Included in the timeline of theoretical

works are linguistic works that affected language construction trends (e.g. Chomsky's *Aspects of the theory of syntax*), as well as prospecti and grammars for constructed languages. Appendix 2 reprints selections from various influential works from the history of language construction, from René Descartes to Nicholas Marr, as well as texts on glossolalia and a typology of artificial universal languages. Since many of the texts are readily available elsewhere (e.g. Paul's First Epistle to the Corinthians), Appendix 2 seems like padding to lengthen a fairly short book. However, many of these texts have not been published in English, so the translations provided here may be of use to English-speaking scholars.

All in all, *Lunatic lovers of language* provides an entertaining read for us closet interlinguists and is a valuable addition to the scholarly literature on constructed languages.

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BOOK NOTICES

Christel Goldap. **Lokale Relationen im Yukatekischen: Eine onomasiologische Studie**. (Continuum: Schriftenreihe zur Linguistik, 8.) Frankfurt am Main/Bern/New York/Paris: Peter Lang, 1991.

The volume represents a revised version of the author's 'Magisterarbeit' at the University of Bielefeld (Germany) and was developed under the auspices of that university's project on Yucatec, a member of the Mayan language family. As the author notes, while not on the edge of dying out, Yucatec appears to be undergoing a certain degree of attrition, giving way to Spanish (5, note 2). Work on the language, therefore, takes on added significance and urgency.

The major concern of the volume is the relationship between language and (localization in) space. The author considers two major approaches to this topic, a 'semasiological' and an 'onomasiological' one. The former, which is adopted more commonly in linguistics, is characterized as concerned with the question, 'Which expressions for spatial localization does a particular language employ, what are their syntactic and semantic characteristics, and what do they indicate about the mental representation of locality?' The second, onomasiological, approach assumes the existence of preexistent, ideally universal structures of spatial perception and representation and investigates by what linguistic means these are realized in a given language. (1) The author opts for the second approach, but without clearly stating the reasons for her choice. She notes, however, that the preexistent perceptual structures postulated by the onomasiological approach cannot be determined without reference to linguistic evidence and that their relevance must again and again be evaluated against that evidence (3).

The author defines the notion 'local relation' (i.e. the localization of an object in reference to another object) in terms largely taken from, or compatible with, Langacker's Cognitive Grammar, employing such concepts as 'landmark' and 'domain of search' (13), 'trajectory' (14), and 'prototype' (15). The major part of the volume (33-112) examines the manner in which different 'local relations', such as 'static relations', 'relation of proximity', 'inclusion in a container', are expressed in sentences with verb + prepositional phrase. The result is a rich and interesting data collection on locational adverbials and

prepositional phrases, including such interesting phenomena as the use of bare noun phrases, without prepositions, in unmarked contexts, such as when toponyms indicate the goal of a verb of motion (90).

There is however a clear drawback to this method of presentation: As in most other languages, many different, a priori postulated 'local relations' are expressed by the same lexical means. As a consequence, information regarding these lexical expressions must be repeated again and again, under each of the different 'local relations'. Only the final chapter (p. 113-116) gives a more comprehensive picture of the formal expression of local relations, such as the fact that there are only two simple prepositions in Yucatec, *ich* and *ti'*, that of these *ti'* is the most unmarked and as such can be used to indicate unmarked or nonspecific localization, and that under special circumstances (cf. above), unmarked localization can be expressed by bare noun phrases.

(Hans Henrich Hock)

Braj B. Kachru, ed. **The other tongue: English across cultures**. Second edition. Urbana/Chicago: University of Illinois Press, 1992, pp. xxv, 384. $19.95 (paper), $44.95 (cloth).

The original edition of this book appeared in 1982, combining revised papers from a conference on "English in Non-Native Contexts' (University of Illinois, Summer 1978) with commissioned papers from scholars not present at that conference. The second edition presents not only updated references, a more extensive index, and a new introduction and preface. In addition, four authors of the original edition have contributed new chapters; five contributions of the original edition have been omitted; and four chapters by authors not represented in the original edition have been added. The following discussion is limited to the substantially new elements of the book.

'English as an international language: Directions in the 1990s' by the late Peter Strevens (Chap. 2) presents a survey of the international spread of English, the development of indigenized non-native varieties functioning as national or community languages, and the implications of these developments for the teaching of English as a Second or Foreign Language.

Some of these implications are addressed in more detail in L. E. Smith's 'Spread of English and issues of intellibigility' (Chap. 4), a report on a pilot study testing the intelligibility of different varieties of English. An important conclusion is that '(n)ative speakers (from Britain and the United States) were not found to be the most easily

understood, nor were they, as subjects, found to be the best able to understand the different varieties of English.' (88)

Another implication of the international spread of English is examined in P. H. Lowenberg's 'Testing English as a world language: Issues in assessing non-native proficiency' (Chap. 6). As Lowenberg observes, proficiency assessments routinely make allowances for differences between different standard native varieties (especially British and American English). One of the questions that must arise in assessing the profiency of speakers of non-native, indigenized varieties of English is whether their differences from, say, native standard American English, are comparable to those of, say, standard British English speakers or to those of non-standard British speakers. He concludes that in order to answer this question we need to come to a better understanding of the norms that define STANDARD varieties of non-native, indigenized Englishes. (This issue is more fully addressed in Lowenberg's contribution to Volume 20, Number 2 of *Studies in the Linguistic Sciences*.) The notion of 'standard' in non-native varieties may strike some as preposterous. However, it should be borne in mind that some standard languages, such as Sanskrit or Arabic, have (virtually) no native speakers. Most speakers of Standard German are native speakers of non-standard, regional varieties, and many of these varieties bear a diglossic relationship to the standard language. Even for many native speakers of American and British English the standard variety is a second dialect.

C. L. Nelson's 'My language, your culture: Whose communicative competence?' (Chap. 17) likewise takes issue with the fact that we make allowances for differences between native speakers' varieties English, but not for differences exhibited by non-native varieties. Unlike Lowenberg, however, he does not distinguish between standard and non-standard varieties. (His notions of 'confidence' and 'consistency' are different, since they are not limited to standard varieties.) It is therefore not clear whether Nelson wants to argue for acceptance of all non-native varieties, or (like Lowenberg) just the standard ones.

'Bridging the paradigm gap: Second-language acquisition theory and indigenized varieties of English' by K. K. Sridhar & S. N. Sridhar (Chap. 5) questions the appropriateness and relevance of current approaches to second-language acquisition (SLA) for indigenized non-native varieties of English, especially SLA scholars' negative evaluation of these varieties as 'fossilized interlanguages'. The authors are certainly correct in arguing that such an evaluation fails to provide an adequate characterization of the nature and social functions of indigenized language varieties. However, the inappropriate use of the term 'interlanguage' by SLA scholars does not necessarily force us to reject the concept altogether and to return to the older notion of

'interference', renamed 'transfer'. The notion 'interlanguage' was intended to account for a broader range of developments in SLA than interference or transfer. If used without negative value judgments, it can be argued to be the major vehicle for the developments leading to indigenization, as well as convergence and other language-contact developments. (See e.g. Hock, *Principles of historical linguistics,* 1986, second edition 1991.)

In many parts of the world, the spread and indigenization of the English language have been accompanied by a similar spread and indigenization of literature written in English. In his essay, 'The literary dimension of the spread of English' (Chap. 14), E. Thumboo considers the implications of this development for literary theory and criticism.

Y. Kachru's paper on 'Culture, style, and discourse: Expanding noetics of English' (Chap. 18) explores one specific aspect of the stylistic indigenization of English by comparing the 'style of stance' in Indian English and American English college essay and news article writing. She notes that Indian English rhetorical style is characterized by a much greater use of 'stance-marking' adverbials (such as *sadly, ironically, precisely*) than its American English counterpart. She finds that this greater level of personal involvement is a feature of South rhetorical style, anchored in the Sanskritic tradition. She concludes that its presence in English-medium writing 'reflects an attempt to create the Sanskritic noetics in English ...', but admits that 'a more detailed study ... is needed to see if the findings of this study can be further corroborated.' (347) Detailed empirical studies like that of Y. Kachru make valuable contributions not only to research on the internationalization and indigenization of English but also to the field of language contact studies in general. One hopes that the author will conduct the 'more detailed' studies she is calling for. It would be especially interesting to see whether the greater use of 'stance-marking' adverbials is limited to Indian English or whether it is a feature of broader occurrence, due perhaps to more general differences between Anglo-American essay writing and the rhetorical traditions of most of the rest of the world. (On this broader issue see the contributions to the *Annual Review of Applied Linguistics* 1982.)

The overall quality of production of this second edition of *The other tongue* is excellent, the essays retained from the first edition continue to be interesting and challenging, and the new introductory essay by the editor, Braj B. Kachru, provides an excellent up-date on this prolific author's view of 'The other side of English and the 1990s'.

(Hans Henrich Hock)

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RECENT BOOKS

Studies in the Linguistic Sciences gratefully accepts review copies of recent publications and tries to find reviewers for them. In this endeavor, however, it does not always succeed. Volumes for which no reviewers have been found so far are publicized in this section, with brief indications of contents or interest. Prices are indicated where known. (Unless otherwise indicated, the brief descriptions below are by the editor.)

Elmer H. Antonsen & Hans Henrich Hock, eds. **Stæfcræft: Studies in Germanic linguistics**. (Current Issues in Linguistic Theory, 70.) Amsterdam/Philadelphia: Benjamins, 1991, pp. viii, 217.

This volume contains selected, updated, and revised papers from two symposia on Germanic linguistics, held at the University of Chicago (1985) and the University of Illinois (1986). Issues in synchronic syntax and syntactic theory are covered in papers by Coopmans (Dutch causatives 27-37), Fagan (unaccusative and reflexive in Dutch and German, 40-54), Hoeing (Control theory and empty categories in German, 91-101), Moorcroft (Semantic restrictions on German passives, 146-159), and Sprouse (a parameter of case percolation in German, 185-194). Contributions by Antonsen (1-26) and Leibiger (115-123) deal with morphological questions in German. A paper by Shannon (169-194) addresses some 'connections between morphology and syllable structure.' The remaining five papers are historically oriented. Hock (55-89) deals with the 'origin and development of relative clauses in early Germanic'; Howell (103-113) investigates modern evidence bearing on the interpretation of Old English breaking and Old High German vowel epenthesis; Liberman (125-137) deals with phonologization in Germanic; Marchand (139-146) discusses Vennemann's recent claims about the Germanic sound shift; and Morris (161-167) argues against Latin influence in the rise of German 'periphrastic tenses'.

C. Henry Bradley & Barbara E. Hollenbach, eds. **Studies in the syntax of Mixtecan languages, volume 3**. Arlington, TX: Summer Institute of Linguistics and University of Texas at Arlington, 1991. pp. ix, 506.

This is the third in a series of volumes on the syntax of members of the Central American Mixtecan language family. It contains syntactic sketches of Alacatlatzala and Diuxi-Tilantongo Mixtec and a 'preliminary' syntactic sketch of Concepción Pápalo Cuicatec. The method of presentation, which follows the model of previous volumes, is standardized: A brief introduction, providing an 'orientation', information on the phonology, and a bibliography, is followed by chapters on 'Basic sentences', 'Verb phrases', 'Noun phrases', 'Other phrases', 'Parts of speech' (which deals with morphological derivation and inflection), 'Intersentential relations', and a brief Text. 'The structure of each language is presented with a minimum of theory, numerous examples ...' (vii).

The book provides useful and well-presented information both for scholars of indigenous American languages and for typologists. A tidbit of interest to typologists may be that in 'adverbial possessive noun phrases', it is possible to either front the entire phrase or only the possessor element, in which case the locative adverbial head remains stranded in situ. (26)

Héctor Campos & Fernando Martínez-Gil, eds. **Current studies in Spanish linguistics**. Washington, DC: Georgetown University Press, 1992, pp. xvi, 635. $30.00.

According to the Foreword, this volume contains papers by 'scholars in the areas of Spanish acquisition, phonology, morphology, syntax, and semantics who ascribe to a theory of principles and parameters ...' The book is organized in three major sections. Section 1 ('Cognition') contains papers concerned with generative grammar and language acquisition by C. Otero and J. Strozer. Four of the papers in Section 2 ('Syntax and semantics') address issues or pronoun and/or clitic syntax. Two of these deal with modern Spanish topics (H. Campos and H. Contreras); one presents a synchronic account of Old Spanish clitics (M.-L. Rivero); and one provides a synchronic and diachronic perspective on Old Spanish clitic P2 (D. Wanner). By being syntactically oriented, the latter two differ from Hock's approach in this issue of *Studies in the Linguistic Sciences*. The remaining four papers on syntax deal with Adjective Phrases (V. Delmonte), ditransitive verbs (P. Kempchinsky), indirect questions and the structure of CP (M. Suñer), and perfective *haber* and the theory of tenses (K. Zagona). Section 3 ('Phonology and morphology') offers five papers on phonology, by M. Carreira (on 'alternating diphthongs'), J. Harris (accentual constituents, J. I. Hualde (syllabification), F. Martínez-Gil (redundancy rules and neutralization), and I. Roca (stress and syllables); one paper, by R. A. Nuñez Cedeño, deals with morphology (headship assignment in compounds).

Martin Davies & Louise Ravelli, eds. **Advances in systemic linguistics: Recent theory and practice**. London/New York: Pinter Publishers, 1992, pp. x, 258. $69.00.

The volume contains selected and updated papers from the 17th International Systemic Congress, Stirling, July 1990. Part I ('Framework') offers papers by J. McH. Sinclair and M. A. K. Halliday; Part II ('Metafunctions'), articles by C. Matthiessen and J. L. Lemke; Part III ('Lexicogrammar'), contributions by K. Davidse, W. McGregor, and G. Tucker; Part IV ('Functional sentence perspective and time'), papers by J. Firbas and L. S. Rashidi. The concluding Part V is devoted to one of the favorite topics of Systemic Linguistics, 'Text studies', with contributions by J. D. Benson & W. S. Greaves, C. Emmott, and D. Kies.

Sylvester Douglas. **A treatise on the provincial dialect of Scotland**, edited by Charles Jones. Edinburgh: Edinburgh University Press, 1991, pp. x, 278. $59.00.

Douglas's *Treatise*, written in the 18th century, provides an excellent account of the educated pronunciation of English in London and Scotland of that time. Never published during his lifetime, it has now been edited by Jones, together with an extensive scholarly introduction (which includes a summary and interpretation of Douglas's observations) and comprehensive footnotes. Noteworthy features of Douglas's approach include the view that the distinction between vowels and consonants is not binary, but which, according to Jones, involves a scalar hierarchy in terms of 'cavity resonance characteristics' (11).

Bernd Heine, Ulrike Claudi, & Friederike Hünnemeyer. **Grammaticalization: A conceptual framework**. Chicago: University of Chicago Press, 1991, pp. x, 318, $21.95 (paper), $59.95 ('library cloth').

The topic of the present book is the phenomenon of grammaticalization, such as the change of one of the verbs of a serial-verb construction into a preposition. Drawing on a large variety of African languages, the authors argue that this process is based on metaphor, context, and creativity, i.e. essentially pragmatic and cognitive factors. In so doing, they challenge previous theories. Rejecting the usual distinction between synchrony and diachrony, they claim that both linguistic structure and language use are dynamic phenomena. Moreover, they point to 'hybrid forms', somewhere between the input (X) and output (Y) stages which can only be described as 'no longer quite X but not yet quite Y' (231). Phenomena of this type, reminiscent of Ross's Squishes, challenge the predominant 'either-or' approach.

Shin Ja J. Hwang & William R. Merrifield, eds. **Language in context: Essays for Robert E. Longacre**. Arlington, TX: Summer Institute of Linguistics and University of Texas at Arlington, 1992, pp. xxiii, 616.

The thirty-seven essays by fifty scholars collected in this volume cover a large range of languages: indigenous American languages like Mixe, Zoque, and Guaraní; European languages like English, Latin, and Polish; the African languages Hausa, Mofu-Gudur, and Obolo; ancient near eastern Hebrew; Asian languages like Korean; and the Pacific languages Berik and Tok Pisin. The topics covered are: 'Discourse structures and strategies', 'Topic, focus, and discourse particles', 'Expository discourse', 'Verbs of speech', 'Pragmatic functions', 'Foreground and tense-aspect', 'Clause and sentence', and 'Phonology, phonological history, and writing systems'.

John Laver. **The gift of speech: Papers in the analysis of speech and voice**. Edinburgh: Edinburgh University Press, 1992 (© 1991), pp. xviii, 400. $42.50 (hardback).

The volume represents a collection of twenty articles on two distinct topics: (i) The analysis of speech production with special emphasis on slips of the tongue and related issues, and (ii) the description of voice quality, especially as a social index and as it relates to speech pathology. The final chapter presents a historical survey of the concept of articulatory settings. Many of the articles have appeared previously in relatively inaccessible publications, and four papers have not been published before. Seven articles were coauthored with other scholars, including D. S. Boomer, R. J. Hanson, and P. Trudgill.

Christian M. I. M. Matthiessen & John A. Bateman. **Text generation and systemic-functional linguistics: Experiences from English and Japanese**. London: Pinter Publishers, 1991, pp. xxiv, 348. $69.00.

The term 'text generation' appearing in the title of this book comes from artificial intelligence and refers to a process of reorganizing abstract grammatical structures and lexical terms into a 'worded text'. The purpose of the present book is to demonstrate the usefulness of Systematic-Functional Linguistics in the task of text generation, using English and Japanese examples.

Robin Melrose. **The communicative syllabus: A systemic-functional approach to language teaching**. London: Pinter Publishers, 1991, pp. x, 172. $59.00.

Notions such as 'communicative competence' have been current in much of recent literature on second-language pedagogy. The present book surveys earlier views and asserts that linguistics does have a role to play in communicative syllabus design. The author adopts a systemic-functional approach drawing on the work of scholars like Halliday and Lemke. Specifically, he suggests a 'meaning negotiation' model, based on 'topic' and 'interaction' and sensitive to 'cultural frames', social context, etc., not just to linguistic structure.

Toshiki Osada. **A reference grammar of Mundari**. Tokyo: Tokyo University of Foreign Studies, Institute for the Study of Languages and Cultures of Asia and Africa, 1992, pp. 168.

Among the three major linguistic families of South Asia, the Munda languages have received the least amount of attention among linguists. One of the major reasons for the relative neglect of the Munda languages is no doubt the fact that unlike the Indo-Aryan and Dravidian languages they are 'tribal' languages, without any traditional written literature. Associated with the 'tribal' status of these languages is the fact that they are used by relatively small numbers of speakers, under relatively inhospitable conditions, both as far as geographic location and opportunity for cultural and linguistic survival are concerned. Because of their relatively endangered status, it is highly desirable that they receive more thorough investigation before they undergo further attrition or even language death. The present study of Mundari, a member of the northern branch of Munda, therefore, is to be highly welcomed. It is based on more than six years of field work, during which the author became a fluent speaker of the language. (His wife is a native speaker.) The emphasis of the volume lies in the areas of phonology (p. 19-40) and especially morphology (41-150), an area in which the author has used the questionnaire of the Lingua Descriptive Studies series. Regrettably, syntax is relegated to five pages (151-154) and does not deal with issues such as subordination which pose interesting theoretical challenges in South Asian languages. However, some syntactic information can be found in the discussion of morphology. The phonology section deals with the 'phonemic inventory', 'syllabification', 'accentuation', and 'vowel harmony' (in terms of the feature [high]). The section on morphology provides extensive discussions of nouns (including syntactic and semantic functions of case marking), pronouns, verbs (including agreement and the non-finite verbal system which as in other South Asian languages, plays a significant syntactic role), adjectives, postpositions, numerals, adverbs, a grab-bag of 'conjunctions, interjections and vocatives', particles (including topic, negative, and question markers), and 'expressives' (partial or complete word reduplication, a prominent feature of South Asian languages).

Linda A. M. Perry, Lynn H. Turner, & Helen M. Sterk, eds. **Constructing and reconstructing gender: The links among communication, language, and gender**. Albany: State University of New York Press, 1992, pp. ix, 310.

The volume is a collection of twenty-five essays whose purpose it is to 'cut across disciplines and scholarly methods'. The disciplines on which it draws include Communication, Linguistics, English, Business, Law, and Psychology.

In addition to several papers concerned with rhetorical issues, two essays are of special interest to linguists: 'Genderlect, powerlect, and politeness' by N. Hoar (Chap. 11) and 'The *tu/vous* dilemma: Gender, power, and solidarity' by A. H. Deakins (Chap. 13). An appendix adopted by the Organization for the Study of Communication, Language, and Gender addresses the issue of 'Avoiding sexism in communication research: Guidelines for gender/sex research and publication'.

Nicolas Ruwet. **Syntax and human experience**. Edited and translated by John Goldsmith. Chicago: University of Chicago Press, 1991, pp. xxv, 334. $24.95 (Paper), $57.95 ('Library cloth').

The main thesis of this book is that many phenomena that usually are considered syntactic and accountable for in terms of straightforward generalizations must, instead, be explained in terms of the more fuzzy manner in which we view the world. Thus, in the first two chapters, Ruwet argues that the relative grammaticality or lack thereof in Engl. *I want to leave/*I want me to leave* or its French counterpart *Je veux partir/*Je veux que je parte* is a consequence, not of syntactic considerations, but of the fact that the relationship between oneself and one's actions is fundamentally different from that between oneself and the action of others. (Unfortunately, in this context Ruwet does not examine the fact that languages like Modern Greek only permit the type of construction that corresponds to the starred structures of English and French, such as *θelo na γrafo*, lit. 'I want that I write'.) Chapter 3 and 4 extend this argumentation to weather verbs (with Chap. 4 concerned with 'Weather verbs and the unaccusativity hypothesis'). The final chapter deals with the 'Use and abuse of idioms in syntactic argumentation.' An important conclusion reached by Ruwet is that 'we should, among other things, rehabilite taxonomy' and that 'the systematic use of judgments may allow us to build new and more rigorous taxonomies, and new theoretical proposals may and must be tested by means of taxonomies bearing on new, formerly undiscovered, types of data' (xix).

Ivan A. Sag & Anna Szabolcsi, eds. **Lexical matters**. (Lecture Notes, 24.) Stanford: Center for the Study of Language information, 1992, pp. xx, 328. $19.95 (Paper), $49.95 ('Library cloth').

The papers collected in this volume concern the content of lexical entries, the nature of lexical representations, and the structure of the lexicon. The four major themes are: (i) Argument structure and the nature of thematic roles, with papers by C. Tenny ('The aspectual interface hypothesis'), M. Krifka ('Thematic relations as links betwen nominal reference and temporal constitution'), and F. Ackerman ('Complex predicates and morpholexical relatedness: Locative alternations in Hungarian'); (ii) Blocking and the boundaries of the lexicon, with contributions by D. Farkas ('On obviation'), W. Poser ('Blocking of phrasal constructions by lexical items'), and M. Liberman & R. Sproat ('The stress and structure of modified noun phrases in English'); (iii) The nature of lexical meaning, with contributions by F. Kiefer ("Hungarian derivational morphology, semantic complexity, and semantic markedness'), and G. Gergely ('Focus-based inferences in sentence comprehension'; (iv) Lexical alternatives to syntactic analysis, with papers by A. Szabolcsi ('Combinatory grammar and projection from the lexicon', dealing with English anaphora), P. Jacobson ('The lexical entailment theory of control and the *tough*-construction'), and I. Sag, L. Karttunen, & J. Goldberg ('A lexical analysis of Icelandic case', specifically, of 'quirky case' in Icelandic complementation).

Reuven Tsur. **What makes sound patterns expressive? The poetic mode of speech perception**. Durham, NC: Duke University Press, 1992, pp. xi, 174. $16.50 (Paper), $32.50 ('Library cloth').

In his preface, Tsur labels his book a 'study in Cognitive Poetics' (i). His major concern is to provide a basis for capturing people's '"mysterious" intuitions' about language, such as the notion that front vowels are 'brighter' than back vowels, and the role played by these intuitions in poetic language. For this purpose he draws on the insights of literary critics, linguists, and psychologists. Chapter 4, on Rimbaud's *Voyelles*, illustrates the way in which 'the perceptual qualities of speech sounds ... account for the feeling of mystic insight' (ix) evoked by the poem.

David O. Westley. **Tepetotutla Chinantec syntax**. (Studies in Chinantec Languages, 5.) Arlington, TX: Summer Institute of Linguistics and University of Texas at Arlington, 1992, pp. xiii, 129.

The first two chapters mainly provide background information, chapter 1 on the phonology, chapter 2 on the morphology of the verb (including such issues as agreement). The remaining chapters successively take up clause structure, the noun phrase, pronominal syntax, relative clauses, 'injunction' (i.e. imperatives and other modal structures), questions, prepositions, and modal adverbs. Tepetotutla Chinantec is a VSO language permitting the fronting of one or more elements to clause-initial, preverbal position (especially of subjects), and has an ergative system of verb agreement. The author's statement that '(a)ll verbs are finite' (83) suggests that subordination is possible only in terms of fully clausal structures.

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TWENTY-FIVE YEARS OF LINGUISTIC RESEARCH AND TEACHING AT THE UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Graduate Research by Doctoral and Master's Degree Students

with Autobiographical Vignettes
by Five Founders of the Department

EDITOR

Braj B. Kachru

With the assistance of
Amy C. Cheatham
and
Frances Vavrus

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This volume is dedicated to the memory of

Henry Kahane

November 2, 1902 - September 11, 1992

Foreword

In the academic year 1990-91, the Department of Linguistics at the University of Illinois at Urbana-Champaign celebrated the 25th anniversary of its founding. Among the commemorative events was a series of lectures presented by eight nationally and internationally prominent scholars who had received their training in the Department. These lectures have now been published as *Linguistics in the Nineties: Papers from a Lecture Series in Celebration of the Department's Twenty-Fifth Anniversary,* edited by Hans Henrich Hock (*Studies in the Linguistic Sciences* 20:2 [Fall 1990]). Other events were state-of-the-art conferences on "The Organizaton of Phonology: Features and Domains", and on "Linguistics and Computation: Computational Linguistics and the Foundations of Linguistic Theory", the hosting of the thirteenth national meeting of the South Asian Languages Analysis Roundtable, and an exhibition in the University Library of representative works by Department faculty members (for details of the entire program, see *SLS* 20:2 x-xii). This year-long celebration now reaches its culmination in the publication of the present volume outlining highlights in the history of the Department and cataloguing linguistic research at the University of Illinois at Urbana-Champaign in the form of abstracts of master's theses and doctoral dissertations by students who received degrees in the Department over the first quarter-century of its existence.

The 25th Anniversary Lecture Series was introduced by the late Henry R. Kahane with a talk entitled "The Establishment of Linguistics at Illinois", which is presented in this volume along with autobiographical vignettes by Henry R. Kahane, Charles E. Osgood, Robert B. Lees, Braj B. Kachru, and Charles W. Kisseberth, all of whom played crucial roles in establishing the Department and in determining its course over the first quarter-century. These vignettes were solicited in 1974 for a book planned by Thomas Sebeok, but for certain reasons, the book never materialized. Their inclusion here seems particularly appropriate, since they provide unusual and delightful insights into the human side of the history of a linguistics department from its conception, through the gestation period, to its birth, and on to its coming of age. While these vignettes refer specifically to the Department of Linguistics at Illinois, they cast interesting light on the personalities and thinking of some of the most prominent linguists of the second half of the twentieth century, since the founders of the Department were themselves ensconced among these or were their early colleagues or students. Of general human interest are the manner in which these five scholars were attracted to the field of linguistics and the quirks of fate that led them to their own specific destinies, whether their paths started out in Central Europe or South Asia, in Massachusetts or the Midwest. It is perhaps a pity that the book planned by Sebeok did not materialize, but it seems to me that these vignettes from almost twenty years ago now make even better

reading than they would have then, for they have taken on a certain patina with time,[1] and we can now judge them with greater objectivity. In any case, they are valuable testimonies not only to the formative years of the Department, but also to a critical period in the development of the field of linguistics. We can all delight in the fact that they have at last found a fitting repository for the edification and inspiration of future generations. The Department had been looking forward to a celebration of Henry Kahane's 90th birthday in November of 1992. Instead, his unexpected death in September led to a Memorial Tribute held in the Krannert Center for the Performing Arts on 14 November 1992. The texts of these tributes are also presented in this volume.

While Henry Kahane's personal recollections of the events and personalities leading up to the founding of the Department in 1965 are presented here, it seems appropriate to mention a few other milestones in the Department's history, including the fact that the actual proposal submitted to the University was worked out in 1963 by a committee chaired by Robert B. Lees (then of English and Communications Research, and Director of the Program in Linguistics) and consisting further of Joseph H. Allen (Spanish, Italian, and Portuguese), Katherine Aston (English), Frank G. Banta (German), Joseph B. Casagrande (Anthropology), Kenneth L. Hale (Anthropology), Lee S. Hultzén (Speech), Henry R. Kahane (Spanish, Italian, and Portuguese), Frederic K. Lehman (Anthropology), Rado Lenček (Russian), Howard S. Maclay (Communications Research), Charles E. Osgood (Communications Research), Angelina R. Pietrangeli (Spanish, Italian, and Portuguese), Victor Terras (Russian), and Willard R. Zemlin (Speech).

From its very inception, the Department assumed a leading role in the development of linguistics in the United States and currently ranks among the top five departments in the nation. Only three years after its founding, however, the Department was faced with a grave internal crisis when its first head, Robert B. Lees, emigrated to Israel, and two of its most prominent younger faculty members, Arnold Zwicky and Theodore Lightner, were lured away to other institutions. Compounding the difficulties was the collapse of the post-Sputnik era of national educational enlightenment. To the great good fortune of the Department, the helm was taken over by an energetic scholar of vision, Braj B. Kachru, first as Acting Head in 1968-69 and then as Head from 1969-79. Under his leadership, the Department made great strides in enhancing its position not only within the campus community, but also on the national and international scenes. He initiated the journal *Studies in the Linguistic Sciences* (*SLS*), which has since attained such stature as to be included among the journals surveyed by the *Bibliographie linguistique/Linguistic Bibliography*.

[1] The time-warp becomes particularly obvious from the new blatantly obvious absence of gender-neutral modes of expression. There is no need to point out instances, since they are so apparent. They serve as an indication of the progress that has been made over a less sensitive age.

During his headship, the annual departmental *Newsletter*, now in its twenty-fourth year, was initiated. He recruited promising young scholars, encouraged members of the faculty to launch a conference on African linguistics, and was himself co-organizer of a conference on South Asian linguistics and director of a summer Linguistics Institute. While significant in themselves, these conferences were the stimuli for the development of permanent national and international traditions of regular conferences attended by the leading authorities in these fields. We have recently witnessed the Twentieth Annual Conference on African Linguistics (proceedings edited by Eyamba Bokamba in *SLS* 19:2 [Fall 1989] and 20:1 [Spring 1990]), and the Thirteenth South Asian Languages Analysis Roundtable (meeting handbook edited by Hans Henrich Hock in *SLS* 20:3 [Spring 1991]).

In 1976, the Division of Applied Linguistics was established as a research unit within the Department of Linguistics with a cross-cultural and cross-linguistic focus. It coordinates and initiates research activities in the areas of bilingualism/multilingualism, language and development, literacy, and English in a global context. The Division has organized and partially supported numerous international conferences, colloquia, and seminars, and collaborates in activities related to English in the international context initiated by Larry E. Smith of the East-West Center in Honolulu. The Division has international academic contacts with scholars and institutions in such countries as India, Nigeria, Pakistan, and Singapore, which facilitates the exchange of research in various areas of applied linguistics, particularly in the study and analysis of English in non-native contexts. Among other projects, the Division of Applied Linguistics is at present taking a leading role in the establishment of a databank for various types of non-native Englishes, and with the support of other campus units, sponsored a conference on World Englishes in April 1992. Research projects initiated by the Division have been supported in the past by the Ford Foundation, the American Institute of Indian Studies, the Research Board of the University of Illinois at Urbana-Champaign, among other agencies. Professor Braj B. Kachru is Coordinator of the Division.

Under the leadership of Chin-W. Kim (Chair, 1979-1986) and Charles W. Kisseberth (Chair, 1986-1989; Acting Head, 1989-1990), the Department maintained and consolidated its position of eminence in the fields of phonology, syntax, and historical linguistics, and in the areas of applied linguistics and non-Western language teaching (particularly African and South and West Asian). It sought and eventually received a faculty position in formal semantics in conjunction with the Program in Cognitive Science/Artificial Intelligence and the Beckman Institute for Advanced Science and Technology.

A particular strength of the Department is without doubt to be found in the breadth of its programs, ranging from the most theoretical to the most practical. Because of the wide scope of its activ-

ities, the Department is intimately bound together with numerous other campus units through formally organized joint programs, e.g. in Romance linguistics with the Department of Spanish, Italian, and Portuguese, and the Department of French; in teacher education with the College of Education; in psycholinguistics with the Department of Psychology; and in applied linguistics with the Division of English as an International Language. It has both formal and less formal arrangements with units such as the Beckman Institute, the Center for African Studies, the Center for East Asian and Pacific Studies, the Center for Latin American and Carribean Studies, the Center for Russian and East European Studies, and the programs in Cognitive Science/Artificial Intelligence, in the Study of Religion, and in South and West Asian Studies. In addition, the Department shares faculty members through joint and/or adjunct appointments with the following departments or programs: African Studies; Anthropology; the Center for Advanced Study; Classics; Communications Research; Comparative Literature; East Asian Languages and Cultures; English; English as an International Language; French; Germanic Languages and Literatures; Language Learning Laboratory; Psychology; Slavic Languages and Literatures; Spanish, Italian, and Portuguese; and Speech and Hearing Sciences. The centrality of the Department of Linguistics within the University of Illinois at Urbana-Champaign is clearly evident and accounts to some extent for the fact that an unusually large number of its faculty members have been appointed to administrative positions in campus units outside the Department: Eyamba Bokamba, Director of the Division of English as an International Language, succeeding Braj B. Kachru; C. C. Cheng, Director of the Language Learning Laboratory; Chin-W. Kim, Director of the Program in East Asian Studies (1990-91) and Director of the Program in Japan (1993-94); Jerry Morgan, Associate Director of the Beckman Institute for Advanced Science and Technology; and Ladislav Zgusta, Director of the Center for Advanced Study.

The diversity of the Department's programs was of particular importance in the recent review of the allocation of resources within the College of Liberal Arts and Sciences. The Advisory Committee on Financial Policy to the Dean wrote in its report, *LAS Resources, 1993-2000, Priorities and Principles for Allocations in the College of Liberal Arts and Sciences* (p. 13):

> The Department of Linguistics is one of the College's best departments, with a consistently excellent faculty, and its quality deserves protection. The Advisory Committee recognizes intrinsic strength in our Department's tradition of combining formal and applied areas (including training in the less commonly taught languages) within a single unit. We note that in other universities, units devoted wholly to formal linguistics have not been able to maintain vitality and have been slated for closure. We congratulate our Department for using a different approach and for its success in sustaining its strength.

The excellence of the Department's faculty was recently reaffirmed through the appointment this year of Braj B. Kachru as Professor in the Center for Advanced Study, the highest recognition bestowed on a faculty member by the University of Illinois at Urbana-Champaign. Other linguists accorded this highest recognition include Ladislav Zgusta, James Marchand, and the late Henry Kahane. The Department also claims two LAS Jubilee Professors, C.C. Cheng and Braj B. Kachru, and a University Scholar, Rajeshwari Pandharipande, all-in-all an astonishing record for a department of our size.

While the number of undergraduates majoring in linguistics at the University of Illinois at Urbana-Champaign has traditionally been quite small (partly a result of the first head's firm belief that linguistic students should have a major in a particular foreign language), it is worth pointing out that this small body of students has shown an unusually high level of academic achievement: for example, of a total of eight graduating linguistics majors in 1991, two were Bronze Tablet Scholars (i.e., they ranked among the top 3% of the entire University graduating class), and four were elected to Phi Beta Kappa (i.e., in addition to other requirements, they ranked among the top 10% of graduates in the College of Liberal Arts and Sciences, by far the largest college in the University).

At the suggestion of the Advisory Committee on Financial Policy of the College, the Department is currently engaged in an intensive effort to contract the number of graduate students in its programs and to expand its undergraduate offerings that satisfy the Campus's general education requirements. Three new course proposals have already been submitted to higher administrative levels for approval, and others are in various stages of preparation. The Department is also seeking to strengthen its programs in Arabic language and Semitic linguistics, as well as in sociolinguistics.

The quality of the graduate programs in the Department of Linguistics has never been in doubt. Over the first quarter-century, the Department trained 168 Ph.D.s and 51 M.A.s, with 15 candidates for the Ph.D. whose work is still in progress. The great diversity in areas of concentration, in regions of the world, and in languages treated is apparent, not only from the abstracts themselves presented in this volume, but even more readily from the useful indices devoted to these matters. To round out the picture, there are also indices devoted to the authors of the theses as well as to the faculty members who directed them.

I had the privilege of witnessing the events of the anniversary year from the vantage point of an acting head who was neither a true insider, nor a complete outsider. I had held the titles of a faculty member 'without budgetary implications' in the Department ever since I came to the University of Illinois in 1967, just two years after the Department's founding. I have always been interested in, and have often participated in, its activities. After having committed

myself only in this past year to a permanent and intimate relationship with the Department and its excellent faculty, staff, and student body, and having served as Acting Head for a year and a half, I pondered why I had declined the kind suggestion by Henry Kahane in 1967 that I accept a joint appointment in the Department of Germanic Languages and Literatures and in the Department of Linguistics. I was no longer sure of the reason until I read the late Charles Osgood's and, more particularly, Braj Kachru's contributions to this volume with the vivid descriptions of their early encounters with the Department's first head, Robert B. Lees. I realized then for the first time that it was my failure to interpret correctly Bob Lee's straightforward mannerisms that had dampened my interest in a joint appointment, and not until after the decision had been made did I come to realize what a generous and kind colleague he really was beneath the disguising exterior.

In an era of great uncertainty in academe brought on by the unstable economic situation in the country, it is my sincere hope and conviction that the Department of Linguistics will be able to weather the external storms and continue long into the future the excellent work begun more than 25 years ago and partially chronicled in this volume.

Urbana, IL
July 1993

Elmer H. Antonsen, Head
Department of Linguistics

Preface

This volume has a fascinating biography. The plans for the project were initiated as a modest undertaking at the invitation of the Committee which was formed to plan a program for the celebration of the 25th Anniversary of the Department of Linguistics at UIUC. The original plan was to compile a volume listing the Ph.D. dissertations and Master's theses submitted to our department from its founding to 1992. This was one of several projects to celebrate the Silver Jubilee of the Department as outlined in the Foreword by Professor Elmer Antonsen. But as time passed, new ideas and suggestions substantially altered the original plan. The volume gradually became larger and larger, like the proverbial tail of the mythical monkey-god, Hanumana.

What we now have is a three-part volume. However, these three parts, I believe, directly contribute to our understanding of the founding and development of the Department as one of the major centers of linguistic studies and research in the world. The addition of parts one and two was an afterthought, and thereby hangs a tale.

The reasons that motivated the inclusion of these parts have been discussed in the introduction to each part. But, briefly, both parts have historical significance for our Department. The first part includes specifically commissioned perspectives originally written in 1973-74, over twenty years ago. These were meant for a specific project that is briefly discussed in the introduction to part one. That project, however, did not materialize; but copies of the papers were preserved by Henry Kahane and me.

The title of the second part is self-explanatory. Henry Kahane passed away on September 11, 1992. We were planning to celebrate his ninetieth birthday on November 2, as some of us had been celebrating his birthday for several years, at his favorite restaurant, Katsinas, in Champaign, Illinois. Henry was deservedly recognized as the founder and as one of the major builders of the department. He delivered the inaugural lecture in a series of lectures organized to celebrate the Silver Jubilee. These lectures have already been published in a special issue of *Studies in the Linguistic Sciences* (Vol. 20:2; Fall 1990).

The third part consists of the original idea, providing information about the Ph.D. dissertations and Master's theses from the year of the Department's founding to 1992. That is actually the original tail of the monkey-god Hanumana.

I hope that this special issue of *SLS* will be useful to our former graduates and to new students who will join the Department in the years to come, and to linguists in the USA and elsewhere.

This volume is dedicated to the memory of the late Henry Kahane. Professor Kahane was, as stated above, as instrumental in the preparation of Part I of this volume as he was in initiating various other enterprises related to our Department since the time he joined UIUC, and until he passed away on September 11, 1992.

Urbana, IL
August 15, 1993

Braj B. Kachru

Acknowledgements

In the planning, editing, and production of this volume a number of colleagues, students and the office staff of the Department of Linguistics have contributed directly and indirectly. My appreciation and gratitude are particularly due to the following: to the late Henry Kahane who, in his usual pleasant and persuasive manner, helped in putting together Part I of this volume; to executive officers of the linguistics programs in the Midwest who provided detailed information about their units and promptly responded to my follow-up questions for writing the chapter "Linguistics in the Midwest: Beginnings to 1973" — it would not have been possible to write this chapter without their cooperation and valuable input; to Elmer Antonsen for writing a detailed and informative Foreword; to Hans Henrich Hock, editor of *Studies in the Linguistic Sciences (SLS)*, for his invitation to include this volume as a special issue of *SLS*, and for his patience in spite of the delay in preparation of the final version; to Frances Vavrus, who was associated as editorial assistant from the inception of this project until 1992, and to Amy Cheatham, who took over from Frances and saw this volume through the final stages of editing, checking and production — the contribution of the two of them has been invaluable; to Sara Michael and Rosa Shim for their editorial assistance; to Cecil L. Nelson, a former Ph.D. student of our department, now a professor at Indiana State University, Terre Haute, IN, for his insightful and precise editorial comments and constructive suggestions; to Eyamba G. Bokamba for checking references related to Africa and African languages; to William F. Brewer for editing Charles E. Osgood's paper; and to Beth Creek, Cathy Huffman, and Eileen Sutton for attending to the one-hundred-and-one chores which the production of a complex volume such as this entails.

Braj B. Kachru

PART I

Perspectives on Linguistics in the Midwest and at Illinois

ACADEMIC ADMINISTRATORS
of
THE DEPARTMENT OF LINGUISTICS
1965-1993

ROBERT B. LEES
Head, 1965-1968

BRAJ B. KACHRU
Acting Head, 1968-1969
Head, 1969-1979

CHIN-WOO KIM
CHAIR, 1979-1986

CHARLES W. KISSEBERTH
CHAIR, 1986-1989
ACTING HEAD, 1989-1990

ELMER H. ANTONSEN
Acting Head, 1990-1992
Head, 1992-

Introduction

I

About twenty years ago, in the early seventies, when the Department of Linguistics was still in an early stage of its existence, we were asked (as were, nationwide, various other Departments of Linguistics) to contribute word portraits of our members: to indicate their development, training, scholarly aims and accomplishments. The idea, which, alas, did not materialize, was good: To characterize through collective pictures of selected departments the status of linguistics in our country.

By now, the present of then has turned into a distant past, and the plans of then into memoirs. The few pieces that follow (written in 1973-74 and appearing here without change, have to be read as a testimony of the development of linguistics at our universities in a time of restless changes, where "modern" means "old", and "post-modern" refers to last Monday.

March 1992 Henry Kahane

II

This part, as Henry Kahane has said above, has a history that goes back to 1973. These papers were specifically invited for a multi-volume series entitled, *Current Trends in Language Sciences*, to be published by Mouton Publishers, the Hague, the Netherlands. Thomas A. Sebeok was the Editor-in-Chief of the proposed project. One of the first volumes in the series was to be on, *The University Teaching of Linguistics in the United States*. The late Henry Kahane was to write a case study of linguistic studies at the University of Illinois. The plan was to include the University of Michigan and Northwestern University as other case studies from the Midwest. In January 1973, I was invited to write a chapter which would include

> ... a presentation and discussion ... of the principal lines of development (roughly, from World War II on) in the teaching of linguistics in linguistics departments and/or programs in those private and state universities located in the states included in your region [the Midwest].

This invitation resulted in the chapter "Linguistics in the Midwestern Region: Beginnings to 1973" which was received by the editorial office of the proposed volumes on March 21, 1974. Henry Kahane followed a different route to compile the case study of linguistics at Illinois. In a succinct note to his four departmental colleagues, dated June 6, 1973, Professor Kahane outlined his plan for

documenting the story of linguistics at Illinois. Let me quote here the relevant parts from the Kahane letter:

> My idea is to tell our story arranged according to linguistic sub-disciplines and presented in the form of a few portraits of the protagonists together with one or two group pictures, rather than in terms of more or less irrelevant so-called statistical facts. The technique of the self-portrait should dominate, and again, not in the Who-is-Who style, with an enumeration of degrees, awards, and publications, but rather as an intellectual history of the portrayee: e.g., How did you come to linguistics — To which method or 'school' of linguistics — Your development before and at the U. of I. — The reception of your field among students and disciplines... and whatever else seems relevant to you. And above all: What did you do to develop your subspeciality within the U. of I. and the impact of the U. of I. on you and your groups' work.
>
> You see what I am driving at. The value of the survey would be greatly enhanced if you could write for us such an essay, of any length that you may want, with September/October as the target date. Since the volume will be widely available, now and later on, your self-portrait is probably, something that will remain and contribute a precious contribution to the history of linguistics in our country and to the methodology of the expansion of a new (or renewed) academic field.
>
> I myself will provide the frame and the 'embedding' of the individual contributions within our case history. I trust that you will permit me to edit and streamline whenever necessary.
>
> Let me end with a trivial note which I feel I should add for correctness' sake rather than for its content. I have been offered $300 for my contribution. Since I am trying to have these portraits authored by others, I shall divide the amount equally among us. I apologize for the remark but you will understand why I add it.

This letter was sent to Braj B. Kachru, Charles W. Kisseberth, Robert B. Lees and Charles E. Osgood. It identified the areas on which each person was to concentrate: Kachru on Applied Linguistics and Sociolinguistics; Kisseberth on the Neo-Transformationalists; Lees on the Transformationalists, and Osgood on Psycholinguistics. In due course, the manuscripts were sent to the editor, and a note, dated March 1, 1974, confirmed, "...that *University Teaching of Linguistics in the United States* has this date, been sent off to Mouton Publishers, for immediate production."

However, a few months later, we received a "Dear colleague" note from the Editor-in-Chief, dated July 22, 1974, informing us that

"...owing to irreconcilable differences which have arisen between me and the new management of Mouton Publishers, I have decided to relinquish the editorship of this series effective this month."

I do not recall having heard from the publishers after that. It was the death of the projected series. This history provides a context for the papers included in this part. During the past nineteen years several changes have taken place: Robert B. Lees is now in Israel (in fact, he submitted his contribution from Israel); Charles E. Osgood passed away on September 15, 1991; and Henry Kahane passed away on September 11, 1992.

When the deliberation for this volume started, we agreed — Henry and I — that the contributors originally submitted in 1973-74, should appear in their original form, without any changes, additions, or updating. These five contributions thus represent perspectives of 1973-74, just a decade after the department was established. These should be read within that context. Professor Elmer Antonsen's Foreword provides a brief update until the academic year 1992-1993.

Braj B. Kachru

LINGUISTICS IN THE MIDWESTERN REGION: BEGINNINGS TO 1973*

Braj B. Kachru

0. Introduction

This survey presents an overview of the earlier and current position of the teaching of the linguistic sciences in the Midwest of the United States; the states included are Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, and Wisconsin.

The focus and orientation of the teaching of linguistics in the Midwest, as elsewhere, are directly related to the theoretical breakthroughs which are made in this region and at other places. Therefore, there are several digressions in this paper which are not directly related to the teaching of linguistics, but are important for tracing the development of linguistics as an autonomous discipline at various institutions. I have also briefly presented the types of linguistic traditions associated with each major institution which now has a fully developed department of linguistics. I have also included information on the teaching of the applied aspects of the linguistic science. There are two areas which have developed due to serious involvement of linguists, i.e. the teaching of non-western languages and the programs in the teaching of English as a foreign (or second) language. These are discussed in sections 8.0. and 9.0. This brief report therefore is primarily about the teaching of linguistics in this geographic region with the perspective of the state of the art as seen in diachronic and synchronic terms.

1.0. Three earlier phases in the teaching of linguistics

The growth of linguistics in the midwestern states is characterized by roughly three stages. In a sense, these three stages also indicate the chronological order in which the linguistic sciences developed in these states. The first stage could be called the pre-thirties period, when linguistic studies were still a part of the comparative neo-grammarian tradition. Courses in linguistics were available in departments such as Classics or German, but most generally, in the departments of English. These courses had essentially a comparative focus such as "Comparative Indo-European," or they concentrated on the elements of language and phonetics or historical linguistics. The second stage could be termed the phase of "field linguistics." This phase is important since it slowly changed the direction of linguistics in the USA from a humanistic area of research to a research area within the social sciences. During this period linguists began to be housed in Anthropology, Sociology, and later, in Psychology departments. For example, at Indiana University, Carl F. Voegelin, who had originally come to the Department of History, moved to the Department of Anthropology. At the University of Illinois at Urbana-Champaign, Anthropology housed

the linguistics program for several years, and Kenneth Hale (now at MIT) joined that department. The result of this shift toward the social sciences was that several courses with an interdepartmental focus came into existence.

In linguistic theory this was primarily the period of Structuralism. It was during this period that the distance between language scholars and linguists started widening; this trend reached its climax in the states during the peak period of structural linguistics. The reasons for the LANGUAGE-LINGUISTICS controversy are varied, and we shall not go into those here.

The third stage began in the fifties. Gradually, but definitely, efforts were made to view linguistics as an autonomous field of study. As a result of this desire for recognition as a discipline, a few independent departments of linguistics were established. In addition, several programs or interdepartmental coordinating committees for linguistics were set up.

The development of programs in linguistics peaked in the sixties. This does not mean, however, that the loose structure of the pre-sixties inhibited linguistic activity or its development as a distinct discipline. The program at Indiana University, which had a serious impact on the development of linguistic study and research in the USA, did not become a Department of Linguistics until 1963 — but by then it had already established itself as a center for teaching and research in linguistics and had also granted several degrees in the field. This was also true at Michigan and Illinois. The sixties, however, saw the formalization of a dozen departments of linguistics in the Midwest. This was a big step forward in one decade. These new departments were: University of Chicago, Chicago, Illinois (1960's); University of Illinois at Urbana-Champaign, Illinois (1964); Indiana University, Bloomington, Indiana (1963); University of Michigan, Ann Arbor, Michigan (1963); University of Minnesota, Minneapolis, Minnesota (1966); Northeastern Illinois University, Chicago, Illinois (1961); Northwestern University, Evanston, Illinois (1966); Ohio State University, Columbus, Ohio (1967); Ohio University, Athens, Ohio (1969); Western Michigan University, Kalamazoo, Michigan (1968); and University of Wisconsin, Milwaukee, Wisconsin (1964).

This trend toward expansion continued until the end of the sixties, when a period of rethinking about the diffusion of higher education was initiated. Understandably this had an effect on the further growth of linguistics departments. However, expansion did not come to a complete stop. The following departments were set up in the early seventies: University of Illinois at Chicago Circle, Chicago, Illinois (1973); University of Iowa, Iowa City, Iowa (1970); Oakland University, Rochester, Michigan (1970); and University of Southern Illinois, Carbondale, Illinois (1970).

In addition to these formalized departments a few programs in linguistics were also set up; for example, the following, among others: Cleveland State University, Cleveland, Ohio (Ad hoc, Interdepartmental Committee in Linguistics, 1973); Indiana State University, Terre Haute, Indiana (Committee on Linguistics and Lexicography, 1973); Northern Illinois University, Dekalb, Illinois (Interdepartmental Committee, 1971); University of Toledo, Toledo, Ohio (Linguistics Committee, 1970). At present, the expansion seems to have come to a standstill. The reasons for this probably can be traced to the more-or-less stagnant condition of higher education in the USA in the past few years, at least as far as the addition of new departments or programs is concerned.

2.0. Teaching of linguistics in the 'Big Ten'

The following universities are traditionally called the 'Big Ten' of the Midwest: Chicago, Illinois, Indiana, Iowa, Michigan, Michigan State, Minnesota, Northwestern, Ohio State, Purdue, and Wisconsin. In this study, the University of Chicago has been treated as the eleventh member of the group. All of the Big Ten universities have departments of linguistics, except for Purdue. In chronological terms, the University of Wisconsin at Madison has the oldest formalized department of linguistics (1954). The University of Illinois at Chicago Circle has the youngest department, established as an independent entity in the summer of 1973; it is still primarily an undergraduate program.

The story of the pioneering universities which initiated linguistic offerings in the Midwest is of interest both in terms of the growth of linguistics as an autonomous discipline, and also from the point of view of the typical stages through which linguistics has had to pass at some of the major linguistic centers in the Midwest. The following selected excerpts give some idea of this process at these universities. At the University of Chicago, the offerings in linguistics date back to 1892. At that university, linguistics

> ...has been an independent unit since the founding of the university, which was in 1892, under the name of the Department of Comparative Philology. It became Linguistics early in the 1960's.[2]

Chicago has an old tradition of teaching and research in linguistics. Carl Darling Buck was selected to join "the original faculty of the University of Chicago, as Assistant Professor of Sanskrit and Comparative Philology, when the University opened its doors on October 1, 1892...In 1930 he was named Martin D. Ryerson Distinguished Service Professor of Sanskrit and Comparative Philology, and in 1933 became Professor Emeritus."[3] Leonard Bloomfield was there as Professor of Germanic Philology from 1927 to 1940.

The Department of Linguistics at Iowa was established in 1970. It began as a program in the department of English in 1962, with a

National Defense Education Act (NDEA) grant. It continued there until 1965, "...when it became an interdepartmental program directed by a committee of nine faculty members representing seven departments in the university."[4]

At Michigan, the Department of Linguistics

> ...was established in 1963, with Herbert Paper as the first chairman, John Catford as the second, and then me [William J. Gedney]. It grew out of an Interdepartmental Program in Linguistics going back to the 1930's, established originally by Professor Charles Fries, headed later by Hans Kurath and then Albert Marckwardt...[5]

At Michigan State University the department of linguistics has the title of Department of Linguistics and Oriental and African Languages:

> [It] was established in 1964 when the formerly existing Department of Foreign Languages was broken into three — a Department of Romance and Classical Languages, a Department of German and Russian, and this Department [Department of Linguistics and Oriental and African Languages].[6]

The University of Minnesota established its department in 1966 under the chairmanship of Walter Lehn.

At Northwestern University, the Department of Linguistics became a degree-granting unit in the 1965 academic year:

> It was a direct outgrowth of a department of African Languages and Linguistics which had been created and staffed a year before. The Program in Linguistics under the direction of Professor Werner Leopold had been in operation at Northwestern University since the mid 1940's. The earlier Program of Linguistics consisted of faculty members from the Departments of Anthropology, English, German and others. The growth of the current department has been essentially an independent one and much linguistics oriented work is still offered in other departments. Much of the impetus for growth in the department involved the exploitation of established scholars in the field of African languages and linguistics.[7]

At Ohio State University, the tradition of linguistics dates back to the twenties when George M. Bolling (Classics) and Leonard Bloomfield (Professor of German and Linguistics from 1921 to 1927) were there. However, it was not until 1961 that a planning committee was set up for the development of linguistics. The committee included Leonard Newmark (then in the English Department) and William S-Y Wang. In 1962 a Division of Linguistics was created and Wang was appointed its chairman. It was, however,

in June, 1967 that the Department of Linguistics was established, with Ilse Lehiste as the first Chairperson.

At the University of Wisconsin at Madison, linguistics passed through several phases, beginning in the 1920's:

> In the middle 1920's the Department of Comparative Philology was established, listing the (by then rather extensive) offerings of several departments in these areas. To what extent this was a purely 'paper department' I have not been able to tell; in 1936 its listed staff, Arthur Gordon Laird (Classics) and Alfred Senn (Slavic and German), were both members of other departments. In 1938 Miles Dillon was appointed as the department's first proper chairman, and its staff was considerably augmented, on paper at least... That year the department included Morris Swadesh on its staff, sharing him with Anthropology, but he left a year or two later. In 1947 the staff consisted of the following, some of whom are known figures in the field: Martin Joos, Frederic Cassidy, Joseph Russo, Miles Hanley, Einer Haugen, Roe-Merrill Heffner, J. Homer Herriott, William Ellery Leonard, Freeman Twadell, Julian Harris, Lloyd Kasten, Edmund Zawacky, and Murray Fowler (who joined the staff in that year). In 1950, the department was rechristened *Comparative Philology and Linguistics*...[8] [his italics]

It was renamed the Department of Linguistics in 1954.

At Illinois and Indiana, autonomous linguistics departments were not formed until the sixties. At Illinois, the Program in Linguistics was a component of the Department of English. (For a detailed discussion see the chapters that follow in Part I). At Indiana, the Interdepartmental Program in Linguistics was set up in 1946 with serious input from seven members representing five departments: H. Herzog and C. F. Voegelin (Anthropology), Thomas A. Sebeok and F. Whitehall (English), Fred Householder (Classics), Harry Velten (German), and Marion Porter (French and Italian). A Department of Linguistics was formally established in 1963.

3.0. The components of the departments of linguistics

The composition of the linguistics departments in the Midwest is not uniform. The variation in the organization of the departments is as follows: First, there are those departments which focus only on offerings in the various branches of the linguistic sciences. In these departments, the core faculty concentrates on the areas of syntax, phonology, and semantics (e.g. Wisconsin, Iowa).

The second type of department has a full graduate program in linguistics with Master's and Ph.D. degrees. However, they also have the added component of non-Western language teaching. The reason for this combination varies from one institution to another. The

following departments have such components: Illinois at Urbana-Champaign (Arabic, Hindi, Modern Hebrew, Swahili and Yoruba); Southern Illinois (Vietnamese, Lao, Cambodian, Arabic, Hebrew, and Persian); Western Michigan (Mandarin Chinese, Korean, Japanese, Hindi-Urdu, Arabic, Swahili, and Hebrew); and Chicago (Malay and Japanese). At some places this integration of the non-Western language component manifests itself in the name of the department, as, for example, the Department of Linguistics and Oriental and African Languages at Michigan State University.

The third type of department has both non-western languages and English as a Second Language as added components (e.g. University of Wisconsin at Milwaukee).

In the above discussion I have included only those universities in the Midwest which have independent departments of linguistics, not what are termed 'interdepartmental programs' or 'interdepartmental committees.' (See below §3.1.)

3.1. Interdisciplinary programs and committees

Interdepartmental programs and committees continue to play an important role in teaching and research in linguistics. Universities with such interdepartmental programs also help in providing graduate students for specialized training in linguisitcs to those universities which have fully-developed departments of linguistics. David Lowton is right when he says, "I think the interdisciplinary programs in linguistics are worthy of mention [in this survey] since these programs are not generally widespread insofar as linguistics is concerned."[10] The main interdepartmental programs are at the following universities, among others: Ball State University, Central Michigan, Miami University, and Youngstown State University.

4.0. Toward establishing theoretical traditions in the teaching of the linguistic sciences

This section is an historical note on the theoretical developments in linguistics in the Midwest. These developments have a direct relevance to the focus in the teaching of the linguistic sciences in this region.

4.1. The forerunners

It was in the Midwest that the initial framework for Structural linguistics was developed by Leonard Bloomfield (1887-1949). In the linguistic literature, this development within the discipline has also been called "The Bloomfield 'School'" (see Fries, 1961). Bloomfield spent a number of years in midwestern universities. He began his career as an Instructor in German at the University of Cincinnati (1909-1910), and then moved to the University of Illinois at Urbana-Champaign, where he worked as an Instructor from 1910 to 1913; from 1913 to 1921, he was an Assistant Professor of Comparative Philology and German at the University of Illinois. In 1921, he was appointed Professor of German and Linguistics at Ohio State

University, a position which he held until 1927. His last job in the Midwest was at the University of Chicago (1927 to 1940), before he became Sterling Professor of Linguistics at Yale University.

It was at another midwestern university (Wisconsin) that Bloomfield had done his graduate work:

> Here he met Edvard Prokosch, his senior by nine years, and fell at once under the spell of the older man's personality. The meeting was an important event in Bloomfield's life; for it marked the birth of his career as a linguist.[11]

It was during his tenure at the University of Illinois that *An Introduction to the Study of Language* (1914) was published. In the Preface to this book Bloomfield says (Bloomfield, 1914, v):

> This little book is intended, as the title implies, for the general reader and for the student who is entering upon linguistic work.

Commenting on the then available linguistic offerings in American universities, the Preface adds:

> Students whose vocation demands linguistic knowledge are subject in our universities to a detached course or two on details of the phonologic or morphologic history of such languages as Old English, Gothic, or Old French — details which are meaningless and soon forgotten, if no instruction as to their concrete significance has preceded. To this method of presentation is due, I think, the dislike which so many workers in related fields bear to linguistic study (iv).

It has already been noted in the literature that the theoretical orientation of *An Introduction to the Study of Language* was somehow different from that of *Language*, which came out in 1933. This change of focus in the second book is partly responsible for the direction which our discipline took during that period.

4.2. Post-Bloomfieldian breakthroughs

The other theoretical breakthrough in descriptive linguistics came from Kenneth L. Pike, who had received the Ph.D. degree from the University of Michigan in 1942. Pike has been working at this same university since his graduation. It was here that he developed the Tagmemic model of linguistics, the preliminary version of which appeared in 1954 in *Language in Relation to A Unified Theory of the Structure of Human Behavior*. A revised edition was published in 1967. It should, however, be mentioned that the University of Michigan never became known for its Tagmemic theoretical orientation. The main center for that model continued to be the Summer Institute of Linguistics.

A recent development in linguistic theory termed "Case Grammar" initially came from Ohio State, where the seminal papers

on this theory were written by Charles Fillmore (now at the University of California, Berkeley) during his tenure at that university. It was originally at Chicago, Ohio State, and Illinois that this model was presented in the courses on syntax.

The developments in three areas, i.e. syntax, phonology, and phonetics, are presented below. These developments manifested themselves directly in the teaching of courses and graduate student research.

4.3. Syntax

The midwestern contribution to syntax and its teaching should be viewed in terms of the work done under various traditions (or models) of linguistics. In a sense, the Bloomfield 'school' (or 'tradition') was initiated in the Midwest, though Bloomfield himself, as Fries says, never meant to establish a 'school' of linguistics (Fries, 1961:196):

> He [Bloomfield] despised 'schools', insisting that the usual attitude of the adherents of a 'school' strikes at the very foundation of all sound science. Science, he believed, must be cumulative and impersonal. It cannot rest on private theories. To Bloomfield one of the most important outcomes of the first twenty-one years of the Linguistic Society of America was that it had "...saved us from the blight of the odium theologicum and the postulation of 'schools'."

In the thirties and forties Bloomfield's book was the fundamental basic text in linguistics, and it soon replaced Whitney's *Language and the Study of Language* and *The Life and Growth of Language*. It is still used in the classroom at several places, especially in introductory courses. Even at those places where it is now considered outdated, the sections on historical linguistics continue to be used.

The Tagmemic model has been used for the analysis of the largest number of unwritten languages, both in the Western and non-Western parts of the world. Pike was its main architect for over a decade, and the model was used by a large number of missionaries in reducing unwritten languages to writing so that the Bible could be translated into those languages.

In the sixties, the universities of Chicago, Indiana, and Illinois were actively engaged in suggesting modifications to Transformational theory, and in applying this extended model to a wide variety of Western and non-Western languages. The graduates from these universities became the radicals in the field.

At Indiana University, the Transformational model, along with other models, was taught by Fred W. Householder, Andreas Koutsoudas, and Thomas A. Sebeok. The University of Illinois took a front position as one of the main centers in the USA for

Transformational linguistics, and developed an exclusive Transformational focus which has since continued.

In the period of the sixties the primary development in the area of syntax and semantics was that of Generative Semantics. In certain circles the term 'neo-Transformationalists' is also used for this development. The varied contexts in which the term 'Generative Semantics' is used is succinctly summarized in Green & Castillo (1972:123):

> In the broadest sense, 'Generative Semantics' refers to the assumption that semantic representation provides the input to the transformational rules of a grammar, an idea which was unthinkably radical when Jeffrey Gruber proposed it in his 1965 MIT dissertation, but which now is taken almost for granted by many. However, only a relatively small part of the literature is concerned with elaborating and explicitly motivating this assumption. In another sense, the term 'Generative Semantics' is taken to refer to a theory in which global rules and other derivational constraints play a major role — although as G. Lakoff argued in "Global Rules", this theory is logically quite independent of the role of semantics in grammar. In still a third sense, 'Generative Semantics' is used to refer to what was for a time called 'abstract syntax', which is not so much a theory or an assumption as a way of doing things...

In some midwestern universities, a young, enthusiastic group of linguists has continued to contribute to the paradigm, both by applying it to various languages, and by bringing a rigor to the analytical techniques.

At the University of Chicago, James D. McCawley has significantly contributed in developing a focus in teaching and research in semantics as an area of linguistic study and investigation. In this he is helped by an Illinois graduate, Jerrold Sadock. The proceedings of the annual Chicago Linguistics Society meetings (CLS) are the primary source of very insightful and programmatic papers in this area. McCawley's two students, Georgia Green and Jerry Morgan, have developed a serious interest in Generative Semantics among a number of graduate students at the University of Illinois at Urbana-Champaign. At Illinois, Herbert Stahlke is using this framework for the description of some African languages, and Yamuna Kachru for the description of Hindi.

At Ohio State University, Michael Geis, Johnny Geis, and Arnold Zwicky are working primarily in this framework on English. Indiana University, through its Indiana University Linguistics Club, makes available very influential (and controversial) "underground" papers on Generative Semantics. (See §13.0.)

In teaching and research in syntax, therefore, this model has become the main thrust at these universities. On the other hand, at

places like Michigan and Wisconsin the aim is toward eclecticism. (See §10.0; for a detailed discussion see Francis, 1973.)

4.4. Phonology

The well-established departments in the Midwest have a long tradition of research and teaching in phonology in the framework of Structuralism. Detailed discussion on this can be found in Valerie Makkai (1972).

In phonology after the early sixties, it was primarily the area of Generative phonology in which Chicago, Indiana, Ohio State, Illinois, and Minnesota made contributions. In recent years insightful new developments in the theory of phonology have been taking place at Chicago, Illinois, and Ohio State. At Chicago, James McCawley has given direction to this research. At Illinois, the team of Charles Kisseberth and Michael Kenstowicz (now at MIT) has attempted to reevaluate certain assumptions and bases of Generative phonology. In their research and teaching, they have not over-emphasized form to the neglect of function (see Kisseberth, 1970). They have re-evaluated the assumption that the "ordering" of rules is the natural way of showing the interactions that exist among rules (see Kenstowicz & Kisseberth, 1970; Kisseberth, 1973a, 1973b). They have attempted to relate "phonological" explanations of phonetic phenomena to "morphological" explanations. Thus, an attempt is being made to relate phonetic and morphological levels to phonological processes. In their research, Kenstowicz concentrates on Balto-Slavic languages and Kisseberth on Amerindian and African languages. At Ohio State, David Stampe (now at Hawaii) and Arnold Zwicky have addressed a variety of theoretical problems in phonology (see Stampe, 1973). Contemporary phonological models have been applied to a wide variety of languages at Indiana, Michigan, and Minnesota. The following, among others, are actively involved in theoretically insightful research in phonology: Andreas Koutsoudas (Indiana),[13] Kenneth Hill and Charles Pyle (Michigan), and Gerald Sanders (Minnesota). At Michigan State University and at the University of Illinois at Chicago Circle, paradigms other than Generative phonology are being actively discussed and taught. At these latter universities, the Stratificational model has been used for the analysis of several languages and is also discussed in detail in courses on phonology. (For detailed discussion see Wang, 1973.)

4.5. Phonetics

The attitude toward phonetics as a branch of the linguistic sciences has varied in the United States from one of "benign neglect" to outright academic hostility. In the linguistic literature there is substantial discussion on FORM vs. SUBSTANCE, and their roles in linguistic description. In the Bloomfieldian tradition the emphasis was primarily on FORM. However, in the Midwest, there has been a continuing interest in phonetics and it has become a serious

component of the teaching at several universities, especially at Illinois, Indiana, Michigan, and Ohio State.

Three books which have had a serious impact on the study and research in phonetics were written by linguists from midwestern universities. Two of these scholars were from the University of Wisconsin: Martin Joos, *Acoustic Phonetics* (1948) and R.-M. S. Heffner, *General Phonetics* (1950). Five years before Joos' book was published, Kenneth L. Pike of the University of Michigan published his *Phonetics* (1943). This book continues to be the standard work in the field. In later years, Pike also published his *Intonation of American English* (1945), and *Tone Languages* (1948). Research on phonetics has not been restricted to articulatory phonetics, since innovative research in experimental and instrumental phonetics was initiated at the following centers, among others: the University of Michigan, Ohio State University, and the University of Illinois at Urbana-Champaign. These universities developed phonetic research as a subspeciality. At Michigan, in addition to Pike, there was Gordon E. Peterson, before he finally moved to Santa Barbara, California. Peterson was the Director of the Communications Laboratory and trained two distinguished phoneticians, Ilse Lehiste and William S-Y. Wang. These two were then responsible for the early planning and development of linguistics at Ohio State University and where, under their guidance, research in experimental phonetics was conducted. In her book *Suprasegmentals*, Lehiste says (1970:vi):

> For a linguist, phonetics is only a means toward an end, not a purpose in itself. The end is to provide reliable answers to linguistically relevant questions. However, for providing these answers, phonetics is indispensable. I believe firmly that true statements regarding phonological phenomena presuppose correct observation of their phonetic manifestation. A phonologist ignores phonetics at his own peril.

At the University of Illinois at Urbana-Champaign, in the Speech Research Laboratory, an active team of researchers worked under Grant Fairbanks during his tenure at Illinois from 1948 to 1962. This group included, among others, Lee Hultzén and later, Willard Zemlin. Some of the important papers by Fairbanks have been published in *Experimental Phonetics: Selected Articles* (1966). In 1967, Chin-W. Kim, a student of Peter Ladefoged, joined the active group of linguists in the Department of Linguistics. Kim helped in setting up a research and teaching laboratory for phonetics. In addition, research and teaching in experimental phonetics is being done by Kenneth Moll at the University of Iowa, and by Raymond Daniloff at Purdue University in the Department of Audiology and Speech Sciences.

5.0. Teaching of the applications of the linguistic sciences

5.1. Linguistics and language pedagogy

In 1933 Leonard Bloomfield included a chapter in *Language* entitled "Applications and Outlook" (pp. 496-509; see also Bloomfield, 1942). In that chapter the applications of the linguistic sciences are seen as being primarily in the area of language learning and language pedagogy. This tradition of restricting the application of linguistics to this one area has continued in the United States. However, it is well known that this restricted view is much narrower than how the applications of linguistics are viewed on the other side of the Atlantic.

In any case, it was the area of language pedagogy which was fostered earlier by linguists in midwestern universities. (A detailed survey of the national scene is presented in Moulton 1961.) In 1942, the Intensive Language Program was initiated with support from the US government. A large number of linguists were involved in that program. In the following year, the Army Specialized Training Program (ASTP) and Civil Affairs Training Schools (CATS) were established. Their operation naturally involved the preparation of pedagogical materials. Linguists from midwestern universities contributed to these programs, especially in the production of what is known as the "Spoken Language Series." The following linguists from the midwestern region contributed to this series: Einar Haugen, then at the University of Wisconsin (Norwegian); Carleton T. Hodge, Indiana University (Serbo-Croatian); Henry and Renée Kahane, University of Illinois at Urbana-Champaign (Greek); Norman A. McQuown, University of Chicago (Turkish); Thomas Sebeok, Indiana University (Finnish-Hungarian); and S. N. Treviño, then at the University of Chicago (Spanish).

It was in the fifties that linguistic insights were first applied to the teaching and learning of English as a foreign (or second) language. This was considered an important area of applied linguistics, and the Midwest provided the lead in this work for over two decades. (For further discussion see §9.0.) At present, at most of the universities where linguistic offerings are available, there is at least one course in linguistics and language pedagogy or language learning. Such courses are offered either in linguistics programs (i.e. Chicago, Illinois, Iowa, Michigan, Minnesota, and Northeastern), or in the TESOL or education programs. (See Table II in Appendix B.)

5.2. Linguistics and the study of literature

In the last decade courses in linguistics and literature (or what is now called "stylistics") have not only developed in linguistics programs but the language departments are also making such courses available. (See Table II in Appendix B.) The term "stylistics" is used for that area of linguistics which is concerned with the formal analysis of literary texts.

The first interdisciplinary conference on stylistics was held in the Midwest in 1958, under the auspices of the Social Sciences Research Council at Indiana University (Sebeok, 1960, v):

> ... to explore the possibility of finding a common basis for discussing and, hopefully, understanding, particularly among linguists, psychologists, and literary critics, the characteristics of style in language.

The proceedings of this conference were incorporated in *Style in Language* (Sebeok, 1960), which set the foundation for this now fast-growing area of the application of linguistics in the USA. (A survey of the current trends in the field of stylistics is presented in Kachru & Stahlke (1972); see also, Chatman & Levin, 1973).

5.3. Linguistics and lexicography

Recently, linguists have become involved in theoretical or applied research in lexicography and have initiated teaching of courses on lexicography in linguistics departments. It was in 1960 that "... a small group of linguists and lexicographers met at Indiana University to discuss a variety of problems related to the making of dictionaries."[13] The proceedings of that conference, entitled *Problems in Lexicography* (1962), certainly had some impact in focusing attention on the linguistic aspects of lexicography and the then state of the art.

In the fifties and sixties, courses in lexicography were offered at a few universities such as Chicago and Michigan. Currently, one or more courses on lexicography are offered by six universities in the Midwest, i.e. Chicago, Illinois at Urbana-Champaign, Indiana, Michigan, Northeastern, and Indiana State.

Indiana State University has taken several important steps in drawing attention to lexicographical research and teaching. In 1970, an alumnus, Warren N. Cordell, gave that university some five hundred dictionaries. This collection includes rare and out-of-print dictionaries. With gifts and matching grants from the National Endowment for the Humanities, this collection is soon expected to increase to:

> ... four thousand dictionaries that cover the entire history of Western lexicography. Several areas are especially worthy of note. These include one hundred and fifty different editions and issues of Samuel Johnson's *A Dictionary of the English Language*; comprehensive holdings of Renaissance English-Latin Latin-English dictionaries; numerous dictionaries by American lexicographers such as Webster and Worcester; and representative classic dictionaries in several Western European languages.[14]

At Illinois, Ladislav Zgusta, the author of the *Manual of Lexicography* (1971), is actively involved in the application of

contemporary linguistic models to lexicographical research. Fredrick G. Cassidy (Wisconsin at Madison) is compiling a *Dictionary of American Regional English* and is also involved in the teaching of courses in lexicography. (For a detailed discussion see Read, 1973.)

5.4. Linguistics and the theory of translation

There are two books which have set the tone for teaching the applications of linguistics to the theory of translation, i.e. Nida (1964) and Catford (1965). There are some institutions (e.g. Michigan) which have courses in this area. In addition, in the fifties, it seems that courses in machine translation also were offered at several places. In recent years, courses on machine translation are slowly disappearing from the scene in the Midwest (see Table II in Appendix B).[15]

6.0. Interdisciplinary teaching and the linguistic sciences

In the United States the tradition of interdisciplinary course offerings goes back at least to the thirties. However, this interest was primarily restricted to areas such as anthropological linguistics. The focus of such courses partly depended on the departmental affiliations of the faculty interested in linguistics. In the last two decades, a considerable number of courses with an interdisciplinary focus have developed. The interdisciplinary areas are primarily the following: anthropological linguistics, bilingualism, computational linguistics, mathematical linguistics, philosophy of language, and psycholinguistics.[16]

7.0. Teaching of linguistics and the challenge of the sixties

The late sixties presented a serious challenge to the linguists of the United States. They were called upon to show the relevance of their discipline to society in general. It was appropriate, therefore, that in 1973 the theme of the Linguistic Institute of the Linguistic Society of America at Ann Arbor, Michigan, was "Language in the Context of Time, Space, and Society." This new trend led to the development of a wide variety of courses and projects on the sociology of language, sociolinguistics, bilingualism, and bilingual education. This societal aspect also became the main focus of linguistic research at several places (see Kachru, 1972). Such courses cover a spectrum from Black English on the one hand to language and sex differences on the other. More than a dozen univeristies in the Midwest now offer courses in the areas of the sociology of language or sociolinguistics (see Table II in Appendix B).

8.0. Linguistics and the non-Western languages

In this subsection I shall concentrate primarily on the involvement of linguists with the languages of the non-Western parts of the world. These languages are often termed "exotic," "uncommon," or "critical." For the most part this includes the languages of the African continent, the Far East, the Middle East, and South Asia.

In a sense, the interest of linguists in non-Western languages, such as Sanskrit is related to their interest in the Indo-European languages in general. The beginning of this interest is generally traced back to the now famous "discovery" of Sanskrit by Sir William Jones. In the early years, before the recent upsurge of interest in the study and teaching of non-western languages in America, the Oriental Institute of the University of Chicago had already earned a considerable reputation for teaching and research in the languages of the Orient.

It was not until the early fifties that linguists actually became involved with modern non-Western languages. It was during this period that non-western language teaching and organized research on these languages started in the USA, and linguists took an active role in this undertaking. The motivation for this research, and the background for the allocation of federal and other funds for this work have already been discussed in the literature by, among others, Brown (1960) and Lambert (1973). The current role of midwestern linguists and institutions in the teaching and research in this area is presented briefly below.

8.1. African languages and linguistics

The universities of Wisconsin at Madison, Northwestern, Illinois at Urbana-Champaign, Indiana, and Michigan State have a heavy emphasis on the teaching of African linguistics. A smaller, but very active center is located at Ohio University, Athens, Ohio. The five major programs have little overlap in African linguistics and have been cooperating through the Big Ten Committee on Institutional Cooperation in offering joint Summer Programs.

The distribution of work in African languages and linguistics, like that of the languages taught, shows a great deal of complementarity. Wisconsin is particularly strong in Berber linguistics (Jeanette Harries), and Bantu linguistics (Lyndon Harries, Daniel Kunene, and Patrick Bennett). The concentration at Northwestern is more in pidgins and creoles (Jack Berry), Ghanaian languages (Berry), and Mende linguistics (Richard Spears). Michigan State is strong in Bantu linguistics (Irvine Richardson), Hausa linguistics (John Eulenberg), and Efik linguistics (John Ritter). Indiana University has a strong program in Hausa and Afro-Asiatic linguistics (Carleton Hodge), and Mende linguistics and literature (Charles Bird), as well as a rich and varied program in other areas of African linguistics through the use of an exchange scholars' program. The University of Illinois, the newcomer in African languages and linguistics in the Midwest, has established a program in Swahili language and linguistics (Chin-W. Kim and Herbert Stahlke), as well as a rich program on the contribution of African linguistics to linguistic theory (Chin-W. Kim and Herbert Stahlke). The University of Illinois initiated the Annual Conference on African Linguistics in 1970.

8.2. Far Eastern languages and linguistics

Research and teaching on the linguistic aspects of the Far Eastern languages and linguistics has continued mainly at four universities. The University of Michigan has produced several dissertations on Chinese and Japanese linguistics. Indiana University has done primarily pedagogical research on these languages. Indiana, Illinois, and Michigan State are the only midwestern universities where there is a focus on the Korean language and linguistics. At Illinois there are several linguists working on Far Eastern linguistics: C-C. Cheng (Chinese), Seiichi Makino (Japanese), C-W. Kim (Korean), and Frederick Lehman (Thai and Burmese). This group of linguists and their students have worked on phonological and syntactic problems concerning these languages in the framework of contemporary linguistics. In cooperation with William S-Y. Wang at Berkeley, C-C. Cheng of Illinois has developed a computer file of Chinese dialects. The file contains phonological information on 23 dialects of Sino-xenic languages, each having about 3000 lexical items. A theory of phonological change, called lexical diffusion, has been proposed based on studies of Chinese historical phonology. (For further details see Wang & Cheng, 1970, and Cheng & Wang, 1971.) At Southern Illinois University, James H. Y. Tai has been working on constraints in Chinese syntax.

8.3. Middle Eastern languages and linguistics

The oldest center for research on the Middle Eastern languages is the University of Chicago where the Oriental Institute made available offerings in this area. At Michigan Ernest McCarus, and at Minnesota Walter Lehn, have continued to direct research and teaching on these languages, primarily Arabic. Illinois has initiated a vigorous program on the linguistic and pedagogical aspects of Modern Hebrew.

8.4. South Asian languages and linguistics

There are courses on the structure of one or more South Asian languages at several midwestern universities, e.g. Chicago, Illinois, Michigan, Minnesota, and Wisconsin. In recent years linguistically interesting and original research has been conducted primarily at Chicago, Illinois and Wisconsin. In the Midwest, Chicago was the first to enter the field of South Asian linguistics. A group of researchers there have worked on several of the languages of this area, for example K. C. Bahl (Hindi and Panjabi), Edward Dimock Jr. (Bengali), John Lindholm (Tamil), and A. K. Ramanujan (Dravidian, primarily Tamil and Kannada). The Munda Languages Project, initiated by Norman Zide, has resulted in several papers and monographs. At Illinois, the primary focus in teaching and research has been on Hindi linguistics and Yamuna Kachru and Tej Bhatia continue research on various aspects of that language. Braj Kachru continues his research on Kashmiri and South Asian English. Courses and research on Sanskrit linguistics have been initiated by Hans Henrich Hock and

Ladislav Zgusta. (For a detailed bibliography see Subbarao and Bhatia, 1973.) The University of Wisconsin at Madison has contributed to the development of teaching materials and linguistic research in several South Asian languages, primarily Hindi (M. K. Verma) and Telugu. At Minnesota, both the Departments of Linguistics and South Asian Studies have members who are continuing research on the languages of this area, e.g. R. V. Miranda (Indo-Aryan).

9.0. Linguistics and TESOL programs

The applications of the linguistic sciences to language pedagogy (see §5.1.) were naturally extended to the fast growing interdisciplinary area of the teaching of English as a foreign (or second) language. In the Midwest, the pioneer in this field has been the English Language Institute of the University of Michigan. It was founded in 1941 under the leadership of Charles C. Fries. Fries was a typical representative of the Bloomfieldian "School" and his *American English Grammar* (1950) and *The Structure of English: An Introduction to the Construction of English Sentences* (1952) have become models of the application of the structural model to a language.

In the forties, Fries published his *Teaching and Learning English as a Foreign Language* (1945). It became a classic in this field and continued to be used as a model for the LINGUISTIC approach to language teaching for over two decades (see Kachru, 1967). The Institute at Michigan has always had a linguist as Director and the previous directors included Charles C. Fries, Robert Lado, Albert H. Marckwardt, and J. C. Catford.

At several universities in the Midwest, TESOL programs have either developed within the linguistics departments, or linguistics has had a serious input in their development. There are some TESOL programs which are part of English departments, and they are doing linguistically insightful work, for example the program in Applied English Linguistics at the University of Wisconsin at Madison. This program has produced very significant research under the guidance of Charles T. Scott. Their publication *Papers in Descriptive, Historical, and Applied English Linguistics* has included many original contributions, not only to the field of TESOL but to several other areas of linguistics, such as stylistics.

At Indiana the TESOL program started as an adjunct of the Department of English and then became a small component of the Program in Linguistics. It was under the direction of Bernard Spolsky, between 1964 and 1968, that the academic foundations for a TESL program were set. In 1968 — for several reasons, both academic and administrative — this component was restructured as an independent unit and renamed the Department of Urban and Overseas English.

At Illinois, the Division of English as a Second Language also started as an adjunct of the Department of English. Several members of its faculty are contributing to linguistically oriented course offerings and research, e.g. Katherine Aston, Lawrence Bouton, Wayne Dickerson, and Yamuna Kachru. The departments of linguistics at the University of Minnesota and at Ohio University, Athens, Ohio, also offer an MA program in English as a second (or foreign) language. (For a detailed discussion see Allen, 1973.)

10.0. The theoretical focus in the teaching of linguistics

The fast-developing and constantly changing field of linguistics creates a pedagogical problem for those who have to develop a curriculum for it at various levels of instruction. The basic question they have to answer is: What constitutes the basic component of linguistic knowledge that should form the basis for a linguistic curriculum? Once this question is settled more or less to the satisfaction of all the faculty, soon another, more intriguing, question comes up: Which model (or models) of linguistics should one focus on in teaching linguistics in a particular department? If one finds even more or less agreement on this question, it is an achievement.

The broad dichotomy generally used to discuss the focus of a department in terms of its teaching is traditional vs. contemporary. As we know, there is no agreement on what these terms mean, since they can be defined in a time dimension or in terms of a particular linguistic model.

One may take the position, as some departments do, that these polemic questions are primarily of interest to an historian of ideas in linguistic thought, not to a teacher of linguistics. However, it soon becomes obvious that such a position is not necessarily correct. If the curriculum is essentially based on one model — for example, Systemic or Transformational — the pedagogical implications are that it results in a monolithic curriculum. On the other hand, if the choice is made in favor of an ecletic curriculum, the danger is of developing no clear focus in research or teaching. In any case, both these choices have their advantages and disadvantages. And, the decision made in either direction is important from the point of view of teaching.

The situation in terms of the theoretical focus in teaching linguistics in the midwestern states provides an interesting profile about the state of the art and the linguistic curricula. The responses to the question concerning the theoretical focus have been summarized in Table I (see Appendix A) under six categories.[17]

11.0. Current trends in the teaching of linguisitcs

As section 1 indicates, there have been approximately three phases in the teaching of linguistics in the Midwest. The forties and fifties were essentially a period of Structuralism. The emphasis was primarily on methodological and procedural refinement. This was

also the period when interdisciplinary course offerings were developed mainly with Anthropology and Sociology.

The sixties initiated a period of polemics and argumentation at the main centers of linguistics. It was during this period that a wide variety of courses were developed and interaction was sought with philosophy, psychology and, in certain cases, with mathematics. This argumentation was not restricted to the scholarly journals but it was obvious in the classrooms, too. The Linguistic Institute of the Linguistic Society of America, as usual, presented this phase of our discipline at Indiana (1964) and at Illnois (1968 and 1969).

This was also the period when the earlier dichotomy between language, literature, and linguistics began to become less visible and research was done in the area of the "linguistic" study of literature. It was during this period that stylistics came of age. In the Midwest now a number of linguistics departments have offerings in this area.

The late sixties and the early seventies again brought a new dimension and a new challenge; the linguistics departments, as did other departments, had to demonstrate their relevance. As a result, a closer relationship developed with the departments of philosophy and psychology. The language and linguistics departments also rediscovered their relevance to each other. But, more visible to a non-American was the phenomenon of midwestern linguists discovering the role and manifestation of language in the Midwest. There was a sudden upsurge in urban language study, Black English, and language and sex differences. In short, language variation, which had been pushed under the rug for over a generation, was back in the classroom. (See also Cassidy, 1973.)

In reorienting the teaching of linguistics in the Midwest with the new thought and new demands, several linguists played an important role at various stages. They were, among others, Eric Hamp (Chicago), C. C. Fries and Kenneth Pike (Michigan), Fred Householder, Thomas Sebeok, and Carl Voegelin (Indiana), Henry Kahane, and Robert Lees (Illinois).

In linguistically orthodox setups, room has been made for new insights in the field, and younger scholars are now more readily accepted.

At institutions such as Illinois at Chicago Circle and Michigan State, attempts are being made to represent, both in teaching and research, linguistic models such as Stratificational (A. Makkai) and the Scale and Category (M.A.K. Halliday). The main thrust of the seventies points toward looking at all aspects and manifestations of language in both teaching and research (see §12.0.)

12.0. The spectrum of linguistics offerings

In Table II (see Appendix B) I have attempted to show the range of linguistic offerings in the various linguistics departments and programs in the Midwest. In the seventies, it seems that all the

aspects of the linguistic sciences and their applications are represented.

13.0. On teaching "underground" linguistics

In the sixties and seventies, the way in which linguistics has been taught at the main centers in the Midwest has made conventional course titles and course descriptions misleading if not irrelevant. In addition, these present only a part of the linguistic "iceberg". The main core of it is underground: By "underground" I mean that the active, innovative groups have telephonic, mimeographed, or dittoed channels of communication about their ideas on the various branches of the linguistic sciences. These convey the state of the art today. They are circulated to the initiated members of the group, who then present the material in their classes. This restricted research has developed into a large body of material in certain areas of linguistics, but especially on syntax, phonology, and semantics. The pedagogical implications of this are that evaluation of course content at various universities has become difficult. Another implication is that this material is not readily available to all the institutions and faculty members interested in a particular field.

In order to remedy this situation, several departments in the Midwest have started their own in-house publications which help in making available the current thinking of active workers in the field. A partial list of such publications is given below; it includes only publications from the Midwest.

Contributed Papers (Speech, Hearing, Language), Purdue University; *Indiana University Linguistic Club Publications*, Indiana University, Bloomington; *Informal Working Papers in Applied Linguistics*, Ohio University; *The Informant*, Western Michigan University; *Minnesota Working Papers in Linguistics and the Philosophy of Language*, University of Minnesota at Minneapolis; *Natural Language Studies*, University of Michigan, Ann Arbor; *Newsletter of the Department of Linguistics*, University of Illinois at Urbana-Champaign; *Occasional Papers of the WOLFENDEN Society on Tibeto-Burman Linguistics*, University of Illinois at Urbana-Champaign; *Papers in Descriptive, Historical, and Applied English Linguistics*, University of Wisconsin at Madison; *Studies in Generative Semantics (SIGS)*, University of Michigan, Ann Arbor; *Studies in the Linguistic Sciences*, University of Illinois at Urbana-Champaign; *Working Papers in Linguistics*, Ohio State Universiity.

The Indiana University Linguistics Club plays an important role in making such "underground" literature widely available. Chicago and Illinois also make available the research of their graduate students and faculty. The *Papers of the Chicago Linguistic Society Meetings (CLS)* has become an important trendsetter in the new thinking in linguistics. At several universities in the Midwest such

materials continue to form the basic core of the advanced courses in linguistics.

14.0. Conclusion

In the previous sections I have presented an overview of the earlier and contemporary trends in the teaching of linguistics and attempted to relate these to the breakthroughs in the theories of the linguistic sciences which were initiated in the Midwest. I have not presented details concerning the role of linguistics in the curricula of English departments or any other language departments. At present, substantial or marginal course offerings in linguistics are available in the Midwest in humanistic disciplines, in the social sciences and also in the colleges of engineering. At several places, programs in computer studies have linguistics-related courses. Therefore, it is obvious that all the manifestations and orientations in the teaching of linguistics have not been covered in this study.

The current status in the teaching of linguistics is exactly the same as the status in the development of the linguistic sciences, one of constant change and innovation. It seems to me that the direction in the near future will be toward developing theoretical foundations and methodological rigor in the teaching of applied linguistics and interdisciplinary offerings.

NOTES

*I gratefully acknowledge the cooperation of the executive officers of the linguistics departments and programs in the midwestern region for supplying me information concerning their institutions for this survey. I owe special gratitude to Chin-Chuan Cheng, Henry Kahane, Chin-W. Kim, Seiichi Makino, Herbert Stahlke, and Ladislav Zgusta for providing me useful data in their areas of specialization. My thanks are also due to S. N. Sridhar for his assistance.

[1] Communication dated 10 December 1973 from Howard I. Aronson says, "There has been no success in establishing a definite date for the origination of the Linguistics Department. I expect it has been an independent unit since the founding of the University, which was in 1892, under the name of The Department of Comparative Philology. It became Linguistics early in the 1960's."

[2] Ibid.

[3] Lane, George S. 1955 "Carl Darling Buck", *Language* 31, 181-189. Reproduced in *Portraits of Linguists: A Biographical Source Book for the History of Western Linguistics* 1746-1963, ed. by Thomas A. Sebeok (Bloomington, Indiana University Press), Vol. II.

[4] Excerpt from a communication dated 15 November 1973 from Robert Howren, Chairman, Department of Linguistics.

[5] Excerpt from a communication dated 31 October 1973 from William J. Gedney, Chairman, Department of Linguistics.

[6] Excerpts from a communication dated 28 November 1973 supplied by the secretary, Department of Linguistics and Oriental and African Languages.

[7] Excerpts from a communication dated 13 November 1973 from Richard A. Spears, Chairman, Department of Linguistics.

[8] Excerpts from a note entitled, "'An Account of the Department of Linguistics, University of Wisconsin-Madison", supplied by Andrew L. Sihler, Chairman, Department of Linguistics.

[9] Note that several of these departments also include the teaching of one or more Western languages. For example, Illinois at Urbana-Champaign, provides instruction in Modern Greek. Western Michigan, in addition to some non-Western languages, also provides instruction in Brazilian Portuguese, Serbo-Croatian, Polish, and Latvian. At Chicago, Celtic, Georgian, Albanian, and Modern Greek are taught in the Department of Linguistics.

[10] David Lowton, Director, Interdisciplinary Major in Linguistics, Central Michigan University, in his communication dated 22 August 1973.

[11] See Bernard Bloch, "Leonard Bloomfield", *Language* 25 (1949), 87-98; reproduced in Sebeok 1963.

[12] For a detailed discussion on the contribution of Indiana, particularly that of Andreas Koutsoudas, see Valdman's contribution which was planned to appear in this series.

[13] See Householder, Fred W., & Sol Saporta. 1962. *Problems in Lexicography* (Bloomington, Indiana: Indiana University, p. v.

[14] Mimeographed brochure provided by the Cunningham Memorial Library, Department of Rare Books and Special Collections, Indiana State University.

[15] Note that currently only two institutions have courses in machine translation, one of them being Chicago.

[16] Interesting insights about the development of psycholinguistics as a distinct area of research are contained in Charles E. Osgood, "The Tale of an Eager then Lonely then Contented Dinosaur" (in this volume).

[17] These six categories have been abstracted from the information supplied by the executive officers of the linguistics departments or programs. I found that these six categories were the crucial terms used to define the theoretical focus or orientation of a department. In certain cases, some executive officers rightly felt that my use of the term 'contemporary', for example, was not well-defined. But then who can define 'contemporary'? If a department did not fall under any of these categories, I have left all the columns

blank and presented their explanation in a footnote, for example, Northwestern.

A few universities did not provide information on this point and therefore have not been included in this table, for example, Ohio State.

[18] "The primary emphasis is generative-transformational, although structural linguistics, especially phonology and morphology is taught." (Ball State)

[19] "The linguistic focus is probably 'contemporary' rather than 'traditional' although I am not certain what you mean by these terms." (Bethel College)

[20] "The focus is bipartite." (Central Michigan)

[21] "We follow more than one method or school of linguistics." (Chicago)

[22] "Our focus is contemporary, if by that you mean post-Bloomfieldian. In fact, I like to think that it is post-Chomskyite in the simple sense that we do not espouse any party line. I would call ours a highly eclectic department. Here a student learns not only about TG, but also about the views of Pike, Halliday, Lamb and even Bloomfield!" (Illinois at Chicago Circle)

[23] "Although most of the linguistically oriented faculty members are interested in contemporary developments, there is no focus in the minor program on either contemporary or traditional linguistics." (Indiana State)

[24] "The theoretical orientation of the department, although not monolithic, is mainly generative-transformational." (Iowa)

[25] "The range of our course offerings is pretty traditional, and is intended to serve primarily although not exclusively, students with interest in English. Somewhat unfortunate, but by necessity, our courses tend toward the 'applied' aspects of linguistics often at the expense of theory. We don't call ourselves a program in applied linguistics, but this is pretty much what we are, I guess." (Miami)

[26] "...we have prided ourselves both back in the days of the Interdepartmental Committee and during the last decade with a Department, on a variety of points of view represented. We are often called an eclectic department." (Michigan)

[27] "Our orientation is contemporary; theoretical courses adhere essentially to the generative-transformational approach, though not in the orthodox way. Scepticism is encouraged and members of the department are, actively engaged in consideration of alternatives to established theories." (Minnesota)

[28] "Our program is not so extensive that we can be said to have a focus. We have tried to include structuralism, general semantics, philology, communication theory, and traditional grammar, as well as

transformational grammar and some of the later models." (Minnesota at Duluth)

29 "I would say that the department represents both traditional linguistics and contemporary linguistics, but perhaps with more of an emphasis on the latter." (Northeastern)

30 "Members of the faculty are [...] versed in contemporary linguistics of various types but one could say that most of us are resistant to and weary of what someone has described as flash-in-the-pan, provincial back-patting 'schools' of linguistics." (Northwestern)

31 "The 'focus' [...] is certainly 'contemporary' although 'traditional' linguistics constitutes a portion of the content of various courses." (Ohio University)

32 "...focus is in terms of contemporary linguistics for both theoretical and applied linguistics." (Southern Illinois)

33 "Presently, our approach is non-doctrinaire." (Toledo)

34 "The focus of the Department as a whole — its programs, courses, and philosophy — could be described as contemporary..." (Western Michigan)

35 "Currently, the Department is theoretically unfocussed, tending on all hands toward an agnosticism whose general footing is that structuralism didn't work, and currently fashionable theories endlessly fascinating though they are — don't seem to be working very well either. No one here seems to be working on either wholly novel theories, or particularly trenchant explorations of current theories. Since the Department is heavily data-oriented and empirical, I would aver that its focus is, if anything, traditional." (Wisconsin)

36 "The focus of the department is on contemporary linguistics, and its orientation is 'generative'..." (Wisconsin at Milwaukee)

37 "...the group would have to be described as eclectic." (Youngstone State)

38 The term 'area linguistics' includes course titles such as linguistic typology.

39 In 'Language Structure' I have included courses on the structure of a particular language (e.g. the structure of Hindi) and courses entitled 'language structure'.

40 By the term 'other' I mean courses which could not be classified under the categories set up in this Table, e.g. neurolinguistics. Note also that the numbers in the Table indicate the total number of courses which could be classified under each of the categories.

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APPENDICES

Appendix A:

TABLE I:
Theoretical Focus in the Teaching of Linguistics in the Midwest

Institution \ Focus	bipartite	contemporary	eclectic	generative-transformational	traditional	no focus
Ball State U.[18]				√		
Bethel College[19]		√				
Central Michigan U.[20]	√					
U. of Chicago[21]			√			
U. of Illinois at Chicago Circle Campus[22]			√			
U. of Illinois at Urbana				√		
Indiana State U.[23]						√
U. of Iowa[24]				√		
Miami U.[25]					√	
U. of Michigan[26]			√			
U. of Minnesota at Minneapolis[27]		√				
U. of Minnesota at Duluth[28]						√
Northeastern U.[29]		√				
Northwestern U.[30]						
Ohio U. at Athens[31]		√				
Southern Illinois U.[32]		√				
U. of Toledo[33]			√			
Western Michigan U.[34]		√				
U. of Wisconsin at Madison[35]					√	
U. of Wisconsin at Milwaukee[36]				√		
Youngstone State U.[37]			√			

Appendix B:

TABLE II: Part 1
Range and Distribution of Linguistics Offerings in the Midwest

Courses / Departments	Applied Linguistics	Anthropological Linguistics	Area Linguistics	Bilingualism	Child Language/Language Acquisition	Comparative Linguistics	Computational Linguistics	Contrastive Analysis	Dialectology	Diachronic Studies	Field Methods	Historical Linguistics	History of Linguistics	Indo-European Linguistics	Introduction to Linguistics	Language and Culture
U. of Chicago	-	-	3	-	-	-	3	1	3	19	2	6	3	3	1	1
U. of Illinois at Urbana	1	-	3	-	-	2	-	1	-	-	-	2	1	2	5	2
U. of Illinois at Chicago Circle Campus	1	1	1	-	-	1	-	-	1	-	1	-	1	1	2	-
U. of Indiana at Bloomington	2	5	6	1	-	1	1	-	1	19	2	1	2	1	3	-
U. of Iowa	-	2	1	-	-	-	1	-	1	14	1	1	1	-	3	1
U. of Michigan	1	-	5	-	1	-	2	1	1	-	1	2	3	2	1	1
U. of Minnesota	2	1	-	-	-	-	-	2	-	-	2	4	2	4	3	-
Northeastern U.	3	-	-	-	-	-	-	-	-	-	1	3	1	1	3	1
Northwestern U.	2	-	1	-	-	1	-	-	1	-	1	1	1	-	1	-
Ohio U. at Athens	1	-	2	-	-	-	-	-	-	-	1	1	-	-	4	2
Ohio State U. at Columbus	-	1	1	-	-	-	-	-	-	-	-	2	5	5	1	2
U. of Wisconsin at Madison																
U. of Wisconsin at Milwaukee	1	-	-	-	-	-	-	-	-	-	1	1	-	-	1	-
Western Michigan U.	-	-	-	-	-	1	-	-	1	-	1	1	-	-	3	-
Southern Illinois U. at Carbondale	-	-	-	-	-	-	-	1	1	-	-	2	1	-	2	-
Oakland	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2
Programs																
Cleveland State U.																
Indiana State U.	2	1	-	-	-	-	-	-	-	3	-	-	-	-	8	1
Northern Illinois U.																
U. of Toledo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Others																
Ball State U.	-	-	-	-	-	-	-	-	-	3	1	1	-	-	1	-
Central Michigan U.	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Miami U.	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-
Youngstone State U.	1	-	-	-	-	2	-	-	-	3	1	-	-	-	-	1

TABLE II: Part 2
Range and Distribution of Linguistics Offerings in the Midwest

Courses / Departments	Language Families	Language Structure[39]	Lexicography	Linguistics & Lang. Teaching	Linguistic Theory	Mathematical Linguistics	Morphology	Philosophy of Language	Phonetics	Phonology	Psycholinguistics	Semantics	Sociolinguistics	Stylistics	Syntax	Writing System(s)	Other[40]
U. of Chicago	12	60	2	1	-	1	1	1	5	5	3	2	4	3	4	1	-
U. of Illinois at Urbana	4	1	1	2	-	2	-	1	9	3	6	1	1	1	5	-	3
U. of Illinois at Chicago Circle Campus	-	4	-	2	-	-	1	-	1	-	4	1	1	-	1	-	2
U. of Indiana at Bloomington	7	22	1	-	3	-	-	-	4	3	-	3	4	1	5	-	6
U. of Iowa	3	7	-	1	-	1	-	1	4	1	4	-	-	-	3	-	5
U. of Michigan	5	13	1	2	1	1	1	-	2	5	6	6	6	2	9	1	2
U. of Minnesota	-	4	-	2	1	1	-	1	5	5	2	3	1	-	6	-	6
Northeastern U.	-	1	2	3	2	-	-	-	1	1	2	2	-	6	5	1	2
Northwestern U.	-	5	-	-	-	2	-	-	2	3	2	1	4	-	3	-	5
Ohio U. at Athens	-	2	-	4	1	-	-	-	3	3	3	1	2	-	3	-	4
Ohio State U. at Columbus	-	-	-	-	2	1	-	-	2	2	2	2	2	-	3	-	4
U. of Wisconsin at Madison																	
U. of Wisconsin at Milwaukee	-	4	-	-	1	-	-	-	1	2	-	1	2	-	2		2
Western Michigan U.	-	2	-	1	-	-	-	-	-	1	1	-	1	-	1	-	1
Southern Illinois U. at Carbondale	1	6	-	5	-	-	-	-	1	2	-	-	1	1	3	-	5
Oakland	-	3	-	-	1	-	-	1	1	1	2	-	-	-	1	-	4
Programs																	
Cleveland State U.																	
Indiana State U.	-	1	1	4	1	-	-	1	5	-	4	1	-	-	-	-	4
Northern Illinois U.																	
U. of Toledo	-	2	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-
Others																	
Ball State U.	-	1	-	-	-	-	-	-	1	1	-	-	-	-	1	-	2
Central Michigan U.	-	-	-	-	1	-	1	1	1	-	1	-	-	-	-	-	2
Miami U.	-	-	-	-	-	-	-	1	-	1	-	-	-	-	1	-	7
Youngstone State U.	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

The History of the Department of Linguistics at the University of Illinois

Henry Kahane

Introduction

In certain ways, the birth and growth of a new academic department at a large modern University reflects changes in the intellectual and social climate of the Nation; it thus merits a modicum of general attention. A new discipline usually exists long before its official recognition; it is hidden under other labels until the time when its inherent dynamics pushes it to the fore, when, as the saying goes, its time is ripe. The story of Linguistics at the University of Illinois, one of those huge Midwestern state universities, is a typical example of the process (paralleled, of course, by the history of linguistics at various other American Universities). I shall try to tell the story by stressing the roles and functions of the scholars, teachers, and administrators on the local scene. The underlying methodological credo is, obviously, my conviction that the academic development of a new unit, particularly in its early stages, before departmental routine has strangled the alternatives, is largely due to the impact of individual personalities.

Bloomfieldian Prelude

An early, short-lived attempt to establish linguistics at the U. of I. deserves interest primarily because of the one man involved. Leonard Bloomfield (1887-1949), the central figure of the American School of Structuralists, taught at the University from 1910 to 1921. He was a member of the German Department, yet his bent toward linguistic generalization was already evident in his academic title from 1913 on, Assistant Professor of Comparative Philology and German. It was the period in which the *Urform* of his influential *Language* (1933) had just appeared as *An Introduction to the Study of Language* (New York, 1914). The early version shows that a mentalistic-psychological approach to language strongly influenced by Wilhelm Wundt still dominated the curriculum which Bloomfield had established. (After he left Illinois for Ohio, Chicago, and Yale, he discarded the mentalistic approach for the mechanistic.) Bloomfield's curriculum at Illinois, necessarily modest as a one-man operation, resembled the Indo-European curricula of European universities, which were often the domicile of linguistic theory. Bloomfield's three courses from 1914 to 1921 bore the titles, Introduction to the Study of Language, Comparative Philology of the Indo-European Languages, and Sanskrit.

The Founding Fathers

The department (or group of departments) in which linguistics surfaced varied from university to university: it could be Anthropology or Philosophy or English or Oriental Studies or Classics

or the foreign languages. Particularly in the language departments linguistics in some form or other had traditionally been taught, intertwined with a specific language: for textual interpretation; in connection with the dreaded medieval courses, Old English, Gothic, Old Spanish; in the framework of the teacher's pedagogical preparation as French phonetics and Latin syntax. The main purpose of these courses, whether historical or descriptive, was to convey information about the target language; linguistic methods, rules, and implications came in, so to speak, by the backdoor. At Illinois, as elsewhere, Linguistics grew not so much from a single department as from a constellation of them. By the mid- and late forties, we had a group of faculty members, most of them associated with the Linguistic Society of America, who, in their respective departments and through common gatherings, tried to promote the "cause of linguistics". The most active were, in Speech, Lee Hultzen (1896-1968), oscillating between phonetics and phonemics, and Grant Fairbanks (1911-1964), an experimental phonetician and a specialist in the acoustics of speech; in Psychology and Communications, Charles Osgood, the psychologist, and his faithful collaborator, Howard Maclay, who contributed to the concept of hesitation phenomena; in Philosophy, Leonard Linsky (at the U. of I. from 1948-67), the semanticist; in Anthropology, Joseph Casagrande (with us since 1960), an ethnolinguist, with a special interest in the Amerindians, who activated the anthropologists's concern with linguistics; and in Romance (Spanish and Italian), the present chronicler, Henry Kahane, philologist. In terms of the general background, the terrible event of WW II proved to be a boon for linguistics: The Linguistic Society developed the so-called Army Method for teaching foreign languages to enlisted men, and through applied linguistics made university communities (among them Illinois) aware of the existence of linguistics itself.

We decided to launch a Department of Linguistics. The academic steps, one after another, were the usual ones: (a) A small curriculum with a director but minus a budget, using the available faculty members on released time; (b) a modest budget for the curriculum; (c) an officially established Department under a head and with members still largely from other departments; and finally (d) a regularly constituted Department. The Department's foundation was a long affair which took about eighteen years, with objections coming partly from administrators who doubted the future of linguistics, and partly from the language departments which often disliked both linguistics per se and a young, dynamic, and often aggressive competitor. We succeeded when, after many hopeful and hopeless memoranda and frustrating notes, two deans of our Liberal Arts College sensed the potentialities of the newcomer: Lyle Lanier and Jack Peltason. The program of the early stage was determined, first, by the constraint, in view of our budgetary conditions, to use just the men and the courses available on the campus, and second, by our consensus to balance, within the available, the various directions of

linguistics: these were, by then, psycholinguistics, phonology and experimental phonetics, semantics, and historical linguistics. The addition of a theoretical linguist was the most urgent desideratum: we had no doubt that linguistic theory would become the core of the curriculum. By 1961, the Program in Linguistics was in existence as a graduate program; in 1965 departmental status had been reached; by 1974 we had 14 faculty members and 66 degree students, and we offered 65 theoretical courses (in addition to 40 devoted to specific languages). Linguistically oriented members of other departments cooperated generously in the teaching of many related fields. Plans were underway for an undergraduate major.

So far five men have played a preponderant role in the history of our department: Henry Kahane, a historian and comparatist linking linguistics to the humanities, the founder and first director, who put the curriculum on its feet and established the basic design for his successors to build on; Charles Osgood, who cooperated from the very beginning in the founding of the Department, the widely known creator of psycholinguistics, whose influence and prestige greatly helped to convince the skeptics, and whose field became one of the hallmarks of the linguistic offerings at the U. of I.; Robert Lees, the orthodox representative of standard transformational theory, a brilliant intellectual, the first head, who gave to the department its decisive direction and put it on the map; Braj Kachru, our sociolinguist, who with extraordinary energy and never-failing gentlemanliness steered the department from its modest beginnings to a complex and flourishing University unit; and Charles Kisseberth, a leading neo-transformationalist, who gathers about him an enthusiastic group of adepts trying to push back the known frontiers, this very moment if possible. These five men (including, I apologize, myself) have consented to portray himself and to give substance, in this way, to the image of our Department. Nationwide, the curricula, our surface, look very much alike; the real image of a department, which we were asked to present, is to be found in its deep structure, the personalities that make up the team. Therefore, the chronicler yields to the protagonists.

The European Emigree

Henry R. Kahane

I was born in Berlin early in our century, an Austrian in the German world. I grew up in a milieu of literary and intellectual stimulation: my father was a man of letters and for three decades the literary adviser of the stage producer Max Reinhardt. My feeling for acculturation and comparative literature developed early. From the study of *Literaturwissenschaft* I turned to Romance linguistics, attracted by the magnetic personality of Ernst Gamillscheg, a trail-blazing genius, who, up to his death in 1971, was inexhaustible in linguistic themes and explanations and, despite political flings, of an incorruptible professional objectivity. Two other teachers who sharpened my insight into the interrelatedness of language and history and area were Max Leopold Wagner and Gerhard Rohlfs. My classical, Romance, and German education widened, principally through my marriage with a scholar of Greek origin who became my life-long co-worker, to a preoccupation with the Mediterranean, that unique testing ground for comparative methods. These methods, within the range of my interests, were essentially historical: explanations stemmed from the similarities and differences between earlier and later stages. With the political events of the Hitler period we found a new home in Illinois. Emigration to America meant to me (among other things, to be sure) the transfer from a diachronic state of mind to a synchronic. Diachronic and synchronic interpretations of the world around us go far beyond academic disciplines; they are, in their different concern for yesterday and today, different forms of life, and I had to adjust to the new way. In linguistic matters, the school of the phonemicists, in high bloom in the forties and early fifties, was a hard and interesting training for a European, and its terse style and precise expression strongly shaped my modes of approach and presentation. In my own studies and in cooperation with my students, I experimented with structural analyses, often eliciting the pattern variants through fieldwork, sometimes without reference to meaning although usually with semantic correlates. But my wife and I returned time and again to the Mediterranean and its cultural conformity, most evident in its nautical parlance, and from the Mediterranean lexicological equations we glided to the problem of the heritage of Hellenism in the Western world. Since we came from word studies, we approached texts with an analysis of the key words; through these, as a point of departure, we tried to solve old riddles of medieval magic, science, and literature. These endeavors to exploit genetic and comparative methods for the reconstruction of medieval humanism culminated in our derivation of the Grail myth from Hermetism. We also attempted, on the basis of the sociolinguistic model of lexical borrowings, to reconstruct a complex phase of medieval history that had not been described by the work of historians: the relations between Byzantium and the West. Such studies involve an interplay of numerous techniques of historical

linguistics: the filiation and chronology of records, phonological substitution, semantic change and semantic connotation, dialectology, and linguistic geography and diffusion. The material and the methods are largely linguistic but the target lies beyond the borderline of the field: with sociolinguist lexicology, the linguist turns into a historian.

I have always loved the classroom performance. What I know about teaching I owe to two highly educational but non-academic experiences. For a few years, right after my doctorate, I became a foreign correspondent in the Balkanic area for a large and prestigious newspaper, the *Berliner Tageblatt*; both the pressure for lucid phrasing and summary and a constant awareness of the reader's level of comprehension formed a unique curriculum in Teacher Training. As teaching has always helped me to write, so writing has always helped me to teach. The second experience was furnished by the theatrical milieu in which I grew up: For me, still today, the classroom is a theatre, the teacher's desk the stage, and the teacher himself a performer — on a high level to be sure (or so we believe) — and a flop if he is not lively, stimulating, or personal, even with a subject matter as brittle as historical grammar.

In my own comparative-historical courses I drew on the classical, Romance, and Germanic languages using them as a vehicle for an introduction to the many forms of diachronic analysis. Within the Department of Linguistics we soon expanded into the area in which the techniques of reconstruction can best be developed, Indo-European linguistics, and we were fortunate in finding three co-workers who approached the problems in their personal ways: Antonio Tovar (with us from '61 to '68, when he left for Tübingen), a many-sided Spaniard, classicist, philologist, grammarian, etymologist, Celtiberianist, Euskarianist, Myceneanist, and Amerindianist; Ladislas Zgusta (who came in '71, taking over my chair), of Czech background and training, again a most versatile, most learned, most productive scholar, covering such fields as onomastics, lexicology, dialectology, and machine translation, such languages as Sanskrit, Chinese and Hittite with the other tongues of ancient Asia Minor; and finally a scholar of the younger generation, Hans Henrich Hock, who specializes in the generative analysis of historical problems, with application to a wide range of languages. Zgusta and Hock represent today's historical linguistics.

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The Tale of an Eager then Lonely then Contented Dinosaur*

Charles E. Osgood

In his instructions to the contributor to this section on the development of psycholinguistics in the MiddleWest, Henry Kahane explicitly requested that "the technique of the self-portrait should dominate, not in 'Who-is-Who's style'... but rather as an intellectual history of the portrayee." Although I'm not much of a portrait artist, this should be fun, and I'll daub away at will. Since I was intermittently, and at such times, intimately, involved in the evolution of linguistics at Illinois as well, my picture will have several reflecting facets — a bit surrealistic, no doubt. The theme for psycholinguistics is marital — engagement, marriage, divorce, and reengagement — and an introspective little dinosaur (there were little dinosaurs, you know) will, of necessity, be the main character.

A Confession and an Awakening

As a baby dinosaur I was teethed on Meaning by a dentist grandfather who had always wanted to be a professor. He fed me rare words and then gave me money to buy jelly-beans when I used them correctly in sentences. Later, around the age of 10, my aunt gave me Roget's *Thesaurus* — perhaps to even the odds with Grampa O. a bit — and I remember having vivid dreams about multi-colored word-points distributed in clusters in an endless space. After an entirely murky spell in grammar school (spent more in reading Tarzan books and science fiction magazines than in school work), I found myself as Editor of both the weekly newspaper and the monthly magazine at Brookline High School, near Boston. I contributed several short stories to *The Challenge*, as the magazine was called. The *Thesaurus* came in very handy, and I went off to Dartmouth College convinced that I was destined to become, not a dinosaur but, a newspaper man and novelist.

But in my sophomore year at Dartmouth I took Introductory Psychology and then an advanced course in Experimental Psychology from a man who was to become both a mentor and a father figure for me — Ted Karwoski. Karwoski was a scholar-scientist with unusual sensitivity, eclecticism in research pursuits (from Purkinje after-images to visual-auditory synesthesia), and an enviable capacity to think about the same problem on several levels at once. The young dinosaur had found what he wanted: a field that offered the right balance between rigor and creativity. My undergraduate thesis (we had them then) was a combination of laboratory work on auditory-visual-verbal synesthesia (or metaphor) and cross-cultural study of parallel polarities (e.g., between white-black, up-down, good-bad, and supraordinate-subordinate) in the medical, religious and other facets of the cultures of about ten human societies (based on field reports by others, of course).

I wonder how common it is for the schema of one's scholarly life to be set in his undergraduate years; this certainly was the case for me — a focus on meaning. At Yale I got swept up in the monumental edifice of learning theory that Clark Hull was building. I believed that, with appropriate extensions, such a theory could handle Man's most complex behaviors, including language — but my focus was still on meaning. With a Ph.D. under his belt (1945: thesis title, *Meaningful Similarity and Interference in Learning*), this dinosaur-to-be began teaching at the University of Connecticut and writing drafts of chapters for what was to be the last graduate-level text in experimental psychology written by a single hand.[1]

In 1949 came the bonanza that every young scholar prays for: an invitation to a major university at a tenured level and — rare in those days — with half-time explicitly for research in a newly formed Institute for Communications Research at the University of Illinois.

Confession

At Illinois I went busily to work on both the (learning theory) nature of meaning and the (semantic differential technique) measurement of meaning, and with a growing group of interested colleagues and graduate students things went along at an exciting pace. But I must confess that at this time — except for the work of Charles Morris in semiotics — I didn't have the foggiest idea of what scholars in other fields were thinking and doing about language behavior. Specifically, as to LINGUISTS, I had only a vague notion that they were strange, bearded, bird-like creatures who inhabited the remoter regions of libraries, babbling in many exotic languages and constructing dictionaries for them — hardly fit companions for a robust, rigorous and objective young dinosaur! Of course, it was true that at that time few linguists had much interest in meaning — my own focus — but there were some who did (Jakobson and Weinreich, for examples) and there was much else they were doing about language that was certainly relevant. The alinguistic state of my awareness is evident from a perusal of the last chapter (title, "Language Behavior") of my graduate text, *Method and Theory in Experimental Psychology*: it is devoid of references to the works of linguists (the possible exception being Benjamin Lee Whorf).

Awakening

In the summer of 1951[2] the Social Science Research Council — sparked by Jack Carroll (attuned to linguistics via his tutelage under Whorf) and supported by John W. Gardner (a psychologist, then with the Carnegie Corporation of New York, and later to become secretary of HEW, and still later organizer of Common Cause — sponsored a summer conference of linguists and psychologists at Cornell University. The linguists were Fred Agard, Tom Sebeok and Stan Newman and the psychologists were Jack Carroll, Dick Solomon and — by a bit of a fluke — Charles Osgood.[3] I say "fluke" because Bernard Riess, a psychologist who had been doing studies on semantic

generalization as a function of age, was the original invitee but had to withdraw (for reasons I can't recall). Since I had already been awarded an SSRC Research Fellowship (for support of the semantic differential studies), I was invited to be his substitute and — frankly, in part because of the attractiveness of a summer in the hills and by the lakes of Ithaca — I readily accepted. I often wonder how the course of my scientific life would have run if this "fluke," and all that followed from it, had not happened. It is at least quite certain that I wouldn't be writing this paper of remembrances for this volume. In any case, that summer was an eye-opener: not only were the linguists NOT either polyglots or lexicographers, but they WERE robust, rigorous and objective — and maybe more so than the young dinosaur!

As a result of that summer's meeting — and with the continuing push of Jack Carroll and the support of John Gardner — the SSRC established a new Committee on Linguistics and Psychology in October of 1952. The initial membership was as follows: Charles E. Osgood (psychologist and, for reasons I can't fathom, chairman); John B. Carroll (psychologist, Harvard); Floyd Lounsbury (ethnolinguist, Yale); George A. Miller (psychologist, MIT); and Thomas A. Sebeok (linguist, Indiana). Joseph B. Casagrande was officially the SSRC staff representative on this committee, but in matter of fact he served more as a regular member.[4] George Miller resigned from the committee at the end of the first year, and Joseph H. Greenberg (ethnolinguist, Columbia) and James J. Jenkins (psychologist, Minnesota) were added in the fall of 1953. This turned out to be a very busy little committee and, as Howard Maclay (1973, p. 596) notes in his history of relations between linguistics and psycholinguistics, contributed significantly to what he calls *The Formative Period* of the relationship (in the 1950's). Maclay's other two stages are *The Linguistic Period* (in the 1960's) and *The Cognitive Period* (so far into the 1970's); these correspond to my Engagement, Marriage, and Re-engagement phases below.

The Engagement

One of the first steps taken by this new Committee was to plan and sponsor a research seminar on psycholinguistics, this being held during the summer of 1953 on the campus of Indiana University — when and where, not by chance, the Linguistic Institute was also having its summer session. In his foreword to the monograph that resulted from this seminar (*Psycholinguistics: A Survey of Theory and Research Problems*, 1954),[5] John Gardner says, correctly, that the seminar "... set itself to the task of examining three different approaches to the language process (and their relationships): (1) the linguist's conception of language as a structure of systematically interrelated units, (2) the learning theorist's conception of language as a system of habits relating signs to behavior, and (3) the information theorist's conception of language as a means of transmitting information... (as well as) to examine a variety of

research problems in psycholinguistics with a view to developing possible experimental approaches to them (p. x)." The senior participants were Greenberg, Jenkins, Lounsbury, Osgood, and Sebeok, with Jack Carroll, Eric Lenneberg, and Joe Casagrande participating for a period of two weeks and with occasional visitors for briefer periods — Grant Fairbanks, E. M. Uhlenbeck, John Lotz, and Werner Leopold. Graduate-student participants for the whole summer were Susan Ervin, Donald Walker and Kelly Wilson (psychologists) and Leonard Newmark and Sol Saporta (linguists).

According to one impartial chronicler (A. Richard Diebold, Jr., 1965), "within a year or two of its appearance, this monograph became the charter for psycholinguistics, firmly establishing the discipline's name. It so successfully piqued the interest of linguists and other behavioral scientists that the volume itself was soon out of print, and also became notoriously difficult to obtain second-hand, or even in libraries (p. 208)." And Sol Saporta was in 1961 to edit the first "... long-awaited reader, *Psycholinguistics: A Book of Readings* ... (which was) also a testament to the fact that there (was) an ever-growing number of university courses variously titled 'psychology of language,' 'psycholinguistics,' 'linguistic psychology,' etc. (p. 208)." According to another observer (Howard Maclay, 1973), "the Formative Period was characterized by extremely good relations between psychologists and linguists. This happy state of affairs had two major sources: a common commitment to an operationalist philosophy of science, and a division of labor that prevented a number of potential difficulties from becoming overt ... linguists were assigned the 'states of messages,' while psychologists assumed responsibility for the 'states of communicators' and, by default, 'the processes of encoding and decoding' (pp. 570-71)."

The thrust of the continuing SSRC Committee on Linguistics and Psychology is evident in the other projects and seminars it supported during the 1950's: (1) a "Southwest Project on *Comparative Psycholinguistics*" (centered at the University of New Mexico, summer, 1954);[6] (2) a conference on *Bilingualism* (Columbia University, 1954); (3) another conference on *Techniques of Content Analysis* (University of Illinois, 1955); (4) yet another on *Associative Processes in Verbal Behavior* (University of Minnesota, 1955); (5) and yet another on *Dimensions of Meaning — Analytic and Experimental Approaches* (1956);[7] (6) a very impressive, large-scale conference on *Style in Language* organized by Tom Sebeok (Indiana University, 1958); (7) a summer seminar on the *Psycholinguistics of Aphasia* (Boston Veterans Administration Hospital, 1958); and a conference on *Language Universals* (Dobbs Ferry, New York, 1961).[8] Ah, happy eager dinosaur! Now reaching maturity, he had participated in the full kaleidoscope of these SSRC activities, and Spring was turning into what HAD to be a Golden Summer.

Psycholinguistics at Illinois in the 1950's

Our eager dinosaur was also very busy on his home grounds at Illinois. During this decade there were a series of theoretical papers elaborating my own version of Neo-behaviorism and its relevance for understanding human perceptual, motivational and semantic processes, in general as well as in language behavior per se: "The Nature and Measurement of Meaning" (1952) — which demonstrated the abject wrong-headedness, of course, of everything psychologists had previously done in trying to measure that elusive thing called 'meaning'; "Behavior Theory and the Social Sciences" (1956) — mainly argued for the power of a two-stage mediation theory for underpinning the social sciences generally, via its incorporation of meaning, but also introduced my three-stage model with its "integration level" on both sensory and motor sides of the behavioral equation; "A Behavioristic Analysis of Perception and Meaning as Cognitive Phenomena" (1957a) and "Motivational Dynamics of Language Behavior" (1957b) — both of which further elaborated on the necessity of a three-stage (or level) model, if behavior theory was to incorporate gestalt-like perceptual and equivalent motor (cf. Lashley, 1951) skill integrations; "A Question of Sufficiency" (1958) — a highly critical review of Skinner's (1957) *Verbal Behavior*, mainly on the grounds of his complete failure to handle meaning; and "Cognitive Dynamics in the Conduct of Human Affairs" (1960) — which was an excursion into the dynamics of congruence and incongruence ("psycho-logic") in human thinking and sentencing.[9]

While all this was going on in my own thinking, our little group of psycholinguists at Illinois was busily pushing the developing Semantic Differential Technique (SD for short) into various nooks and crannies of the social sciences:[10] into the affective thinking that characterizes the "authoritarian personality" (by George Suci, 1952, my first Ph.D.); the prediction and measurement of attitude change (by Percy Tannenbaum, 1953); the nature of dream symbolism (C. Scott Moss, 1953); into the role of source credibility in mass media communications (Jean Kerrick, 1954); the semantics of passive sonar signals (Laurence Solomon, 1954); the nature and measurement of interpersonal identification (Lionel Lazowick, 1954); application of the SD to the Thematic Apperception Test (TAT) cards (Margaret Reeves, 1954); into the semantic factor structures of schizophrenics (Joan Bopp, 1955); the development of assigned meanings in the context of meaningful adjectives (Joan Dodge, 1955); the semantics of advertising (William Mindak, 1955); the semantic structure of aesthetic judgments of visual art (William Tucker, 1955). And in 1954 Zella Luria and I published our blind (SD) analysis of a case of triple personality — the case that was to become famous as "The Three Faces of Eve." Of course, our psycholinguistic interests were not limited to SD research: Kellogg Wilson's (1954) thesis was on an extension of information theory and statistics; Wilson Taylor's (1955)

thesis was an intensive evaluation of his "Cloze Procedure" in information theory terms.

In these days, when so much of research is "administered" — senior people like myself having practically nothing to do with it between original designing and terminal writing-up — it is a real pleasure to look back on those early days at Illinois when we literally lived and breathed our research from morning to night. I used to be my own first "guinea pig" (not impossible for a small dinosaur!) in every experiment, to try to get the "seat of the pants" feel for what might go on in the real subjects' heads. In the midst of doing one experiment, others were always aborning — over coffee, over sandwiches and beer, and even over cocktails and dinner, much to the amusement, but never irritation, of our spice. I am minded of an enlarged photograph on the wall of my office which caught Percy Tannenbaum and myself, glasses in hand, in animated mid-flight over something or other — and a caption had been appended, reading "BUT THERE MUST BE A MEDITATION PROCESS!" Al Heyer and I spent an hilarious weekend, practically without sleep, constructing a monstrous three-dimensional distance model with colored balls and wooden dowels to represent the meaningful similarities among 40 facial expressions of emotions. I still have that old model in my office, but ANGER and BITTERNESS have fallen off, and SURPRISE has somehow gotten attached to ADORATION — by a bemused janitor, no doubt.

In the comparatively brief period from 1950 through 1955 some 70 studies were completed, and in the summer of that year the Osgood family took off on its first sabbatical — in Tucson, Arizona. Packed into the trunk of our second-hand Buick Roadmaster (freshly painted in Dartmouth Green) was everything psychological about meaning and the measurement thereof that I could put my hands on. My sabbatical job was to put into one document all the diverse things we'd been doing on the development and application of SD technique — first with generous support from the University of Illinois Research Board and later from the Social Science Research Council. As each section was completed, I would whip it off to George Suci and Percy Tannenbaum, now on our Institute staff and my closest colleagues in this exploration of semantic space. They showed copies of some of the earlier chapters to the editor of the University of Illinois Press (Miodrag Muntyan), and he suggested making a book of it. So *The Measurement of Meaning* (Osgood, Suci, and Tannenbaum) was published in 1957. Because it had originally been planned as merely a research report, the first hard-cover edition didn't even have an index — so I firmly recommend the later paperback edition (which DOES have an index) to anyone interested in sampling this early work.

To the enduring amazement of Osgood, Suci, and Tannenbaum, this little book proved to be one of the best sellers on the University of Illinois Press list.

Linguistics at Illinois in the 1950's

Professors in disparate fields are often brought into contact by students they share. This is what happened between Henry Kahane and myself. I had only met Henry socially a couple of times by 1953, but when plans for the summer psycholinguistics seminar were taking form I asked for his recommendation of a linguistics graduate student at Illinois who would profit from and contribute to this enterprise — and he suggested Sol Saporta. Not only did Sol contribute most solidly, but he continued to work closely with our psycholinguistics group while completing his thesis under Kahane.[11] It was during another large conference at Indiana in the incredibly hot and humid summer of 1955 — this one on Anthropology and Linguistics[12] — that Kahane and I began, during our commutings back and forth between Urbana and Bloomington, to talk about getting a Ph.D. program in linguistics underway at Illinois. Although there were students specializing in this field, there was no degree-granting pathway for them to follow (for example Saporta's Ph.D. was in Spanish Linguistics).

I spent the academic year 1958-59 as a fellow in the Center for Advanced Study in the Behavioral Sciences at Palo Alto. I had proposed to spend that year doing the first-drafting of a book to be titled — after my graduate text in experimental psychology with the Oxford Press — *Method and Theory in Psycholinguistics*. I actually did just about everything but: finished the final drafting of *Approaches to the Study of Aphasia* (jointly edited by Murray Miron and myself), had long discussions with George Miller and others about Chomsky's new *Syntactic Structures* (1957),[13] did research with Albert Hastorf on predicting the meanings of facial expressions fused in a stereoscope, joined Ed Dozier and Ian Waterhouse in a two-week field-trip to the Grand Canyon area to apply new psycholinguistic techniques to the study of kinship with Hopi and Hopi-Tewa Indian subjects — and MAINLY, given the example of psychiatrist Jerome Frank (who happened to have the Center "cell" next to mine), I worked on problems of applying psychological theory to international relations, ending up with what was to be acronymed GRIT (Graduated and Reciprocated Initiatives in Tension-reduction — cf. *An Alternative to War or Surrender*, 1962).

But by the end of the 1950's the distant mutterings of a scientific revolution were in the air — impelled by Chomsky's generative and transformational grammar (1957) — certainly in linguistics and possibly in cognitive psychology, too. In the preface to his *Psycholinguistics* (1961) Sol Saporta was to say: "... all attempts by psychologists to describe 'grammaticality' exclusively in terms of habit strength (etc.) ... seem inadequate ... to account for some of the most obvious facts of language (p. v)." In 1959 Chomsky wrote a carefully documented and scathing review of Skinner's *Verbal Behavior* (1957) — never responded to by Skinner himself — and this was to have cumulative impact on many psycholinguists. Perhaps

because our dinosaur was confidently mature, had a much more complex behavior theory, and, indeed, had written a highly critical review of Skinner himself, he was not particularly disturbed and kept right on nuzzling along and munching away at his semantic daisies.

The Marriage

While at the Center in Palo Alto in 1958-59 George Miller, Eugene Galanter and Karl Pribram were working on their *Plans and the Structure of Behavior*, to be published in 1960; it was heavily influenced by Chomsky and included a chapter on "Plans for Speaking." This was followed by Miller's important paper titled "Some Psychological Studies of Grammar" (1962) and soon thereafter by a small flood of papers by Miller, his students and others testing the psychological reality (in terms of effects upon processing time, memory and the like) of grammatical structures and transformations. The consummation of this intimate relation between linguistics and psychology was symbolized by two chapters in the *Handbook of Mathematical Psychology* (1963) written jointly by Chomsky and Miller: "Introduction to the Formal Analysis of Natural Languages" (Chomsky and Miller) and "Finitary Models of Language Users" (Miller and Chomsky).

The distant mutterings of revolution were becoming heavy rumblings of imminent paradigm clash. In concluding their debate with Martin Braine over the learning of grammatical ordering of words in sentences, Bever, Fodor, and Weksel (1965) felt themselves able to say: "As the empirical basis for assuming an abstract underlying structure in language becomes broader and the explanatory power of that assumption becomes deeper, *w e recommend to all psychologists that they seriously question the adequacy of any theory of learning that cannot account for the fact that such structures are acquired* (p. 500, italics theirs, not mine)."

By the middle 1960's even the middle-aged dinosaur in his daisy patch was beginning to eye the ominous storm with some concern. But he was still eager and busy, and — as such things are measured — he was successful in his profession and therefore quite confident. In 1960 he received the award for distinguished scientific contribution of the American Psychological Association for his studies of meaning and in 1962 he was elected president of that Association.[14] So early in 1963 I began to worry about what I should say to my fellow psychologists. I went through a period of intense ambivalence about this: on the one hand, since my year at the Center at Palo Alto I had been giving top priority to strategies of international relations in a nuclear age (from 1960 through 1963 I must have averaged about 20 lectures, seminars, etc. per year on GRIT as a rational strategy), and I knew that most of my potential audience expected a tough policy speech on this major social issue; on the other hand, I felt a strong urge to follow the tradition of most past presidents of APA and talk about the most crucial scientific

issues in my own specialty — even if to a much smaller audience as far as comprehension was concerned. I took the latter course, and the title of my address, "On Understanding and Creating Sentences," indicates what I thought was the most crucial issue for psycholinguistics.

I can thank Noam Chomsky (remotely) and Jerry Fodor (intimately) for not letting my "success" make me complacent. I have always been a believer in bringing the opposition up close — both to keep in touch with their ideas and to bounce my ideas off them. So when I met Fodor at Oxford University in the spring of 1961, I decided to invite him to Illinois as a Visiting Professor; he came in the fall of 1962, on a joint appointment in our Institute of Communications Research and the Department of Philosophy. He sat in on my seminar on psycholinguistics (if you could imagine Jerry just "sitting in" on anything; bouncing between floor and ceiling would be more like it!), and several of the students in the seminar told me it was the most exciting course they had ever had. In 1969 I was able to attract William F. Brewer here — from Iowa via Minnesota — and he performed the Devil's Advocate role most ably and amiably.

Oh, how the dinosaur worked on that APA address! By the middle of the summer of 1963 (and only a few weeks before the convention) he had pounded out a small book of 204 double-spaced pages that had to be paired down to about 36 deliverable pages. The full version was never published — I was not really satisfied with it — but much of it was predictive of the path our dinosaur would be following through the next decade. By 1966 the conflict between competing psycholinguistic paradigms had reached what Thomas Kuhn (1962) terms the "crisis" stage in scientific revolutions. Fodor (1965) had published a paper titled "Could Meaning Be an r_m?", explicitly aimed at O. Hobart Mowrer but obviously including me, to which I replied (Osgood, 1966); it claimed to reduce neo-behaviorist two-stage mediation theories to single-stage Skinnerian theory, hence rendering them heir to all of the inadequacies claimed by Chomsky (1959). In the spring of 1966, at the University of Kentucky, there was a conference with an innocent-enough sounding topic, *Verbal Behavior and the General Behavior Theory*. This was published in 1968 under the same title (Dixon and Horton, editors). Particularly in the session on Psycholinguistics, the prepared papers by "revolutionaries" Bever, Fodor, Garrett, and McNeill constituted a frontal attack on behaviorism and associationism generally. As discussant of these papers, I found myself in the unenviable and unfamiliar role of defending The Establishment. The title of my discussion, "Toward a Wedding of Insufficiences," is indicative of my ambivalence in this role. And I was beginning to realize that I WAS the dinosaur!

This is not the place to go into a detailed analysis of the issue of revolutions vs. pendula swings (however, see the chapter by the title

in my forthcoming *Prolegomena to a Behavioral Theory of Cognizing and Sentencing*). But my conclusion from making such an analysis is that, although the impact of Chomsky on linguistics was certainly a revolution in Kuhnian terms, this has not been the case for his impact upon cognitive psychology (or even psycholinguistics). Why? Because it has not met the criteria which distinguish revolutions from mere pendula swings in the competition between viable paradigms: (1) there has been no attempt to incorporate solutions to problems successfully handled by the old paradigm; (2) the old paradigm has not been shown to be insufficient IN PRINCIPLE; (3) there has been no new paradigm to SHIFT TO — in the sense of a well-motivated, internally coherent alternative theory of language performance. There has been a SHIFT AWAY FROM behaviorism in any form, but in the absence of any alternative paradigm this would be better called a "revulsion" than a "revolution." Maclay (1973, p. 579) notes that the responses of "... psychologists who had a vested interest in research on language ... fell into the three familiar categories of AVOIDANCE, CONVERSION, and COMPROMISE ... their overwhelming response was conversion ... (and) the quasi-religious nature of scientific conversion required that those who had seen the light should condemn everything connected with their erroneous views they had previously held."

Maclay also points out (pp. 579-80) that in a clash between paradigms the middle ground becomes very insecure, and he kindly comments that "Osgood was the only major psychologist who continued to take linguistics seriously but who rejected some of its implications for psycholinguistics ... (particularly) the assumption of the centrality of grammar. While acknowledging the success of transformationalism as a linguistic theory and insisting that his students be trained in linguistics, he continued to argue that a revised version of behavior theory was, at the least, an essential component of an adequate psycholinguistic theory." But it was a rather lonesome old dinosaur who kept offering his daisies at the shrine of a near-deserted (if still viable) paradigm in the late 1960's. What was particularly disturbing to him was that, given the prevalent liturgy — that Chomsky had demolished Skinner and Fodor had reduced Osgood to Skinner, thereby demolishing him as well — many young psycholinguists didn't even bother to read what Osgood himself had to say. The old dinosaur even sent some of his best students (after helping guide them to their Ph.D.'s) to serve at the shrine of the opposing paradigm at MIT — Merle Garrett and then, for briefer periods, Ken Forster and John Limber.

Psycholinguistics at Illinois in the 1960's

But this period was another busy one on the home ground, and the dinosaur didn't have much time to brood about possible paradigms lost. For one thing, the extension of the SD technique cross-culturally and cross-linguistically began in 1960, and the number of communities involved around the world increased

steadily from six to about 25 during the decade — accompanied by a steadily increasing local (some 10 staff and graduate-student assistants) and foreign (from a dozen or so colleagues to nearly 60) co-workers, increasingly long periods traveling abroad by the Principal Investigator (the friendly dinosaur), and exponentially (it seemed) increasing correspondence. Nevertheless, he kept a talon or two in psycholinguistics more generally: while the running debate with Fodor, Bever, et al. was going on, there was a study on the semantics of communication via facial expressions (Osgood, 1966) and two papers jointly with Hastorf and Ono (1966) and Ono and Hastorf (1966) on predicting the meanings of facial expressions fused in a stereoscope from the meanings of the component faces. Whose face? Why the genial dinosaur's, of course! A major thrust was toward development of a procedure for discovering semantic features other than the semantic differential; working first with Ken Forster in Hawaii (second sabbatical, 1964-65) and then with Marilyn Wilkins back at Illinois, a "semantic interaction technique" was evaluated — a technique in which the appositeness, permissibility or anomaly of word-pairs in phrases (e.g., !plead with humbly, °plead with sincerely, *plead with tolerantly) were judged by native speakers and the pattern of judgments analysed factorially to determine the features operating (cf. Osgood, 1970a, 1970b). And there was a little piece with Jerry Boucher ("The Pollyanna Hypothesis," Boucher and Osgood, 1969) that used our cross-cultural data to test certain hypotheses relating to linguistic and affective marking.

Throughout the decades from 1950 to 1970 the Institute of Communications Research was the focus of psycholinguistics at Illinois, often with joint appointments in Psychology, and the continuing grants from NIMH and NSF for the cross-cultural projects also supported both staff and graduate students specializing in this field. Osgood was Director of the Institute from 1955 through 1965, when Howard Maclay took over. And James Carey was to become Director in the 1970's. Murray Miron was Co-director of the cross-cultural project and a "resident psycholinguist" during the early 1960's; Leon Jakobovits took over the same role in the middle to late 1960's; since then William H. May, truly my right arm (as chief programmer, data analyst and budget manager), has served as Co-director since 1969. Danny Steinberg was with us for a couple of years in the mid-60's as a post doctoral student from Hawaii.

Brief citations of the topics of the doctoral theses of my students during this decade will document the gradual shift of focus from words to sentences:[15] Murray Miron's thesis (1960) was a cross-cultural study of cognitive interaction among words, colors and forms; Ken Forster (1964) compared the difficulties of completing left-deleted vs. right-deleted sentences (left-deleted, of course, were harder for English speakers, but later Ken extended this study to speakers of Turkish, a left-branching language, and found the same

difference, but less in amount); Merle Garrett (1965), working then at MIT under Fodor, did one of the earliest studies on the subjective displacement of clicks in one ear as a function of the syntactic structures of sentences received in the other ear; Dogan Cuceloglu (1967) — one of the five or six young people so far who first worked as field staff on our world-wide project and then came to Illinois for advanced degrees — did a three-culture study of the communicative components of facial expressions; John Limber (1968) did a three-mode factorial study of the functions of sentence-frame, noun, and adjective features in determining the acceptability of resulting sentences; James E. Martin (1968) made a theoretical and empirical study of the determinants of prenominal adjective ordering; and Tulsi Saral (1969) returned to the domain of facial, gestural and postural communication, but now between live humans in interpersonal interactions.

Disillusion and Divorce

The marriage between linguistics and psycholinguistics in the 1960's might better be called an elopement — or perhaps even an abduction — because it was a very one-sided affair. The intuitions of generative linguists were to provide a theory of Competence, or knowledge that native speakers have of their language, and the wifely psycholinguists were to cook up experiments on Performance designed to demonstrate empirically the validity of such a theory of how the mind works in sentencing. This presumed a direct Correspondence Hypothesis (Hayes, 1970) — "that the sequence of rules used in the grammatical derivation of a sentence — that is, the derivational history of the sentence — corresponds step by step to the sequence of psychological processes that are executed when a person processes the sentence (p. 5)."[16] Learning a language was equated with the acquisition of its syntax, and semantics took a back seat. Since it seemed inconceivable that such an incredibly complex capability as a transformational grammar could be learned in the incredibly short period of three or four years, it was assumed that much of it must be innate — universal to humans and specific to language.

Although the early psycholinguistic studies of sentence processing by George Miller (1962) and his students and associates seemed to give credence to such a Correspondence Hypothesis, even by the mid-60's sufficient contrary evidence had accumulated to lead Fodor and Garrett (1966, p. 162) to say "... an acceptable theory of the relation between competence and performance models will have to represent that relation as abstract, the degree of abstractness being proportional to the failure of formal features of derivations to correspond to performance variables." In the absence of ANY characterization of this "abstract" relation, of course, all this does is to remove competence grammar from the danger of being disconfirmed by performance data.

The denouement of the Competence/Performance distinction, in my opinion, came at a symposium on *Cognition and the Development of Language* held in 1968 at Carnegie-Mellon University, the papers being subsequently published under the same title in 1970 (Hayes, editor) — particularly in the contributions of William C. Watts ("On Two Hypotheses Concerning Psycholinguistics") and Thomas G. Bever ("The Cognitive Basis for Linguistic Structures"). Watts first demolished (to his satisfaction, as well as mine) the hypothesis that a Competence Grammar, derived from the intuitions of linguists, could be isomorphic with what he terms a deeper Mental grammar — i.e., that Competence could describe how the mind works in understanding and creating sentences;[17] he then proposed the hypothesis that what he terms an Abstract Performance Grammar must be isomorphic with the deeper Mental Grammar — and although he was rather vague about the nature of this APG, it is clear that a theory of "how the mind works in sentencing" is to come from abstracting about the performances of speakers, particularly children. The main theme of Bever's paper was that performance, at least in part, determines ultimate linguistic Competence; "many aspects of adult language derive from the interaction of grammar with the child's processes of learning and using language (1970, p. 280)," and after demonstrating this in a variety of language processing situations, he concluded that we must "... reject the claim that a linguistic grammar is in any sense internal to such linguistic performances as talking and listening (p. 344)."

Re-engagement

Needless to say, the elderly dinosaur in his daisy patch was following these developments with great interest, and even the casual observer could see the brightening gleam in his eye and the increasing vigor with which he flicked his tail. By the early 1970's he had discovered a new field of semantic daisies — ones that grew in a wondrous variety of little trees made up of chains of linked blooms — and he fed upon them with relish while he refurbished and expanded the shrine for his paradigm. The denouement of the Competence/Performance distinction had (some might say paradoxically) paved the way for a new, more balanced, and potentially very productive relation between linguists and psycholinguists in what Maclay (1973) has called The Cognitive Period of the 1970's.

And in the Midwest the old dinosaur and his companions have also been moving happily into this new relationship. He contributed a paper titled "Where Do Sentences Come From?" to the Steinberg-Jakobovits collection (*Semantics*, 1971); the main point was to demonstrate that there is an intimate interaction between non-linguistic and linguistic channels in the process of Simply Describing ordinary events, and hence that these channels must share some deeper cognitive level that cannot, in principle, be characterized by LINGUISTIC constructs and rules.[18] The dinosaur and one of his friends

even invaded the heartland of the linguistic domain by publishing an article in *Language* (Osgood and Richards, 1973) titled "From Yang and Yin to *And* or *But*," in which laws of cognitive congruence and incongruence were used to predict the discriminative use of these conjunctions in simple conjoined sentences of the form X is ADJ_1 _____ ADJ_2 (e.g., X is sweet _____ kind or X is cowardly _____ honest) — frames which, linguistically speaking, will accept either *and* or *but*. A wife-and-husband team, Sara and William Smith, demonstrated in their theses that a priori semantic features intuited on a behavior-theory basis were, indeed, predictive of the speed of completing skeleton words (Sara, 1971) when given cue words varying in feature overlap with the skeletons (e.g., completing _ X _ LO _ T when given BULLY and IMPOSE ON vs. WARN, varying in feature similarity to EXPLOIT) and predictive of falsely recognizing as "old" new interpersonal verbs in long lists as a function of feature similarity (William, 1972).

In the spring of 1972, after I got back from several long trips around the world in connection with the continuing cross-cultural project — which was becoming something like a dinosaur having a bear by the tail! — what we call our Cog Group began to hold regular idea-suggesting and idea-critiquing sessions, first with a small group of my own graduate students and psycholinguist colleague, Bill Brewer, and later with an expanded group of students in several fields and two lively young linguists at Illinois, Georgia Green and Jerry Morgan. Combining my type of componential mediation theory (semantics) with liberal dashes of intuition about meanings of entities and their action and stative relations (syntax) in pre-linguistic behavior, we were trying to build a fresh conception of "where sentences come from and go to" — or, going back to Watts' notions about the characterization of the deep Mental Grammar, you could say that we were trying to build an APG (Abstract Performance Grammar) on a psychological as well as a linguistic basis.[19] Oh, these Cog Group sessions have been exciting for the old dinosaur — down-right rejuvenating, in fact! And they are good intellectual fun — particularly, I guess, when the old fellow tries to put on his baby booties and intuit how his pre-linguistic world was structured cognitively.

A number of recent theses and research papers were generated by these Cog Group sessions, and they pretty well portray the nature of our new thrust: Rumjahn Hoosain's thesis (1973) confirmed the prediction that cogs[20] encoded from the perceptual channel (e.g., two outline facial expressions) as well as cogs across perceptual and linguistic channels (e.g., a smiling face and "I flunked the exam") will display the same processing difficulties as functions of (a) negative affect and (b) incongruence as do conjoined sentential cogs. In another study titled "The Processing of Negation," Hoosain (1974) demonstrated the same effects for simple linguistic cogs, also to be conjoined by *and* or *but*, and added a third negativity factor, the

number of explicit *nots*. In her thesis (1973) Gordana Opacic explored the psycholinguistics of various modes of conjoining cognitions, in terms of types (Simple Junction, Sequence, Cause, Cause and Sequence, Intention), in terms of forms (basic, centered *and* or *but* and their extensions like *and so*, *but still then*, and the like, vs. displaceable adverbials like *before*, *because*, and *in order to*), and in terms of displacement of adverbials and clause order — and predictions based on assumptions about "naturalness" (based on intuited pre-linguistic experiences) were confirmed. Tom Hewett (1973) tackled the problem of presuppositions, confirming the prediction that, since the theory says that presuppositions of sentences are cognized and stored at the time of comprehending them, along with the given sentence, subjects should falsely "recognize" the presuppositions but not control statements using the same words. Meridith Richards (1974) tested the hypothesis that, in both comprehending and producing triplets of prenominal adjectives in the context of displays of object-sets, both adults and children would order the adjectives according to the abstractness (frequency-of-usage) of the semantic features they tap — with generally supportive results.

And so, the old dinosaur is contented — but neither complacent nor satisfied. There will always be much to be busy about. Whence psycholinguistics at Illinois into the 1980's and maybe beyond? The cross-cultural project, particularly its *Atlas* of some 600 translation-equivalent concepts for some 30 language-culture communities around the world, has generated enough data on what we now call "subjective culture" to take up the energies of a dozen young scholars for several years to get it reported to social scientists — and meanwhile Oliver Tzeng, Bill May and I are working on refinements in methodology for analyses of the some 50 categories of concepts in the *Atlas*. I now expect that this little shrine to the neo-behavioristic paradigm will go through a period of expansion. Bill Brewer and his students are busily mining gold in the field of memory for ideas — not necessarily incompatible with my views, by the way, since we are moving in on a cognitive theory of "ideas," too. But the old dinosaur knows that he will never be satisfied. Life is like the ending of his favorite symphony — Sibelius's Second, especially the Robert Kajanus rendition that I got second-hand from the music library at Dartmouth College 'way back in 1938 — always striving for fulfillment, but never quite achieving it.

NOTES

* An earlier version of this paper was published under the title, "A dinosaur caper: Psycholinguistics past, present, and future," in the *Annals of the New York Academy of Sciences*, Volume 263, pp. 16-26, September 19, 1975.

[1] Not because there was no other hand capable of doing it, but because the field of psychology was literally exploding in numbers of people and numbers of research papers.

[2] To keep my "confession" and "awakening" unconfused in time, it should be noted that, although my Method and Theory was published in 1953, it was already in production at the Oxford University Press by the fall of 1952 — too late to do any re-writing of whole chapters.

[3] I might also note, as relevant to the development of psycholinguistics at Illinois, that Don Dulany — who some years later was to come to Illinois with the help of my prodding and become a central figure in our cognitive psychology program — participated in this Cornell meeting as a graduate student member.

[4] Again for historical purposes, I should note that in 1960, when I was asked to chair a search committee for a Head for a new Department of Anthropology (separate from a department that had combined anthropology and sociology), I was fortunate to be able to talk Casagrande into leaving SSRC and coming to Illinois.

[5] Appropriately enough, this monograph was published simultaneously in both the *International Journal of American Linguistics* and the *Journal of Abnormal and Social Psychology.*

[6] It was mainly out of our contacts with Howard Maclay on this project that he was invited to Illinois as an Assistant Professor in the Institute of Communications Research in 1956.

[7] It was at this one that our little dinosaur first met Noam Chomsky and got the impression that he was (a) brilliant, but (b) not convinced that meaning was the central problem for students of language.

[8] Many of these activities resulted in book-length publications (*Trends in Content Analysis*, Ithiel Pool (Ed.), 1959; *Style in Language*, Thomas Sebeok (Ed.), 1960; *Approaches to the Study of Aphasia*, Osgood and Miron (Eds.), 1963; *Universals of Language*, Joseph Greenberg (ed.), 1963) and others in journal publications by individual participants.

[9] It is perhaps testimony to the pervasiveness of "psycho-logic" that most behavior theorists were oblivious to the existence of an Integration Level in my general theory — perhaps because it introduced S-S and R-R relations where only S-R (stimulus-response) relations "obviously" should obtain!

[10] All dates in what follows refer to doctoral dissertations by students who were my advisees, available in the University of Illinois Library. Most have also been published in various journals.

[11] Sol collaborated with Jim Nunnally and myself in preparing a monograph describing a procedure for analysing sentences in texts into their (paraphrastic as sets) kernel assertions — in principle, if

not in formal elaboration, like the transformational grammar that was soon to appear in Chomsky (1957) — kernel assertions that could then be coded on affective features. This monograph was published in *Litera* (Osgood, Saporta, and Nunnally, 1956), a journal edited in Turkey as I recall, and proved to be one of the best kept secrets in psycholinguistics!

[12] Obviously, Tom Sebeok was an extraordinarily effective organizer of scholarly conferences! As the only psychologist participating, I found myself in the often embarrassing situation of trying to field questions of the form ". . .and what does our PSYCHOLOGIST think about X vs. Y?"

[13] Considering what was to happen in psycholinguistics as a result of the impact of Chomsky, it's a good thing I didn't write my book — and I STILL haven't, but definitely plan to now.

[14] The sequence between that award and election to presidency of APA, with two or three years intervening, seems to be repetitive; George Miller followed this course a few years later, as did Donald Campbell, for example.

[15] See fn 10. I'm sure I must have omitted a few of those who did their dissertations under my direction, and to them I can only apologize for lack of evidence in my files and for the memory lapses of an old dinosaur.

[16] In an oft-quoted (recently) footnote, Chomsky himself (1961, fn 16) early stated that this is an "utterly mistaken view."

[17] It is interesting that this characterization of Competence is more prevalent among converted psycholinguists (e.g., McNeill, 1970, Palermo, 1971) than among linguists (cf. fn 16).

[18] Maclay (1973, p. 583) points out that "if language is inextricably involved with . . . nonlinguistic systems, the distinction between competence and performance becomes highly questionable" — 'completely untenable', I would say.

[19] The final chapter of my forthcoming *Prolegomena to a Behavioral Theory of Cognizing and Sentencing* (Mouton Press, 1975) will be an attempt to put all of these Cog Group activities into more formal expressions.

[20] "Cogs" is our shorthand for "cognitions": a simple cog can be represented as $[M_1 — (M) \rightarrow M_2]$, where the Ms are the componential meanings of perceptual entities (or the subject and object constituents of base sentences) and the arrow is the Action or Stative relation between them.

(*Received February 1974.*)

How to Find the Right Tree to Bark Up

Robert B. Lees

One of the reasons I flunked the required course in Inorganic Chemistry TWICE at the University of Chicago back in 1947 was my pretentious and misguided practice of taking down all lecture notes in German, a language with which I have never had more than a studious tourist's acquaintance. But the disaster forced an already crystallizing issue, and still on the GI Bill, I walked across the campus, to sample the Geisteswissenschaften.

No doubt some covert feelings of intimidation or discontent still troubled me, and I was disposed to leave research on classified projects, for we had been rather shaken by having enjoyed the dubious privilege of appearing, as first on the list of atomic scientists in Chicago, before a government-organized tribunal investigating the extent to which I and my wife were Communist supporters of the Soviet Union. Such questions are still alive in Washington, though Sen. Joseph McCarthy is not.

With chemistry credits as minor, plus music, a sizable dose of Germanic philology, Bloomfield's and Sapir's, Pike's and Harris's structural linguistics, and several years' worth of Sanskrit, they conferred on me my first college degree, the Artium Magister and inducted me into the Phi Beta Kappa, and I went to work as an apprentice linguist for my professor, Norman A. McQuown.

Despite the efforts of my Germanic mentor, George Metcalf, of my Sanskrit guru, George V. Bobrinskoy, of the newly arrived Indo-Europeanist, Eric P. Hamp, and of course, of McQuown himself to instruct me in the ways of scholarship, the transition from my laboratory across the campus to our paradigms and phonemes has never really been completed, and in many ways my heart still lies close to mathematics, cosmology, and the stink of chemicals.

Behind lay several years of an interrupted B.S. in chemical engineering plus meteorology and forecasting in the Air Force, some work as a metallurgist, four years of research in physical chemistry at Argonne National Laboratory — Why leave all that? If occasionally you manage to discover some little thing, it's enough encouragement to go on; but if you ALMOST discover one big thing, you must leave it all to the real experts. I ALMOST discovered carbon-14 dating; but Willard Libby was the expert.

In those days linguistics was basically quite easy and more than a bit tedious — it takes little talent to find those phonemes. But all the new exotic languages were great fun — *Atta unsar, þu in himinam* in half a dozen archaic German languages, *Āsīd rājā, Nalo nāma* and the rest of that cops-and-robbers boy-meets-girl saga of classical Sanskrit, and the struggle to speak left-branched Turkish.

It was about this time that I became acquainted with the late Morris Swadesh, Sapir's most devoted student. He had just begun his study of lexico-statistics with the clever and, I believe, independent observation that the etyma in the word-stock of a language may be viewed as subject to a first-order-rate law, the same which governs the temporal decrease in mass of an element which undergoes simple radioactive decay. I had just abandoned a laboratory crammed with Geiger counters.

At an LSA meeting at Michigan some tedious paper on Stammbäume prompted me to rise and presumptuously and arrogantly announce our definitive resolution of the language family problem on the basis of a mathematical model of morpheme decay. The graybeards gently invited me to lecture on the subject one evening. Later I surveyed some languages, consulted with a real statistician, William Kruskal, and published a paper on what Swadesh insisted on calling "glottochronology". The subject seems still to be very much alive, mostly among anthropologists.

We edited an English-for-Turks bristling with Smith-Trageremics, and a year or so later I took it to Ankara for Leon Dostert (Georgetown University) and inflicted it upon the grateful natives. Our students dutifully heard out my broken-Turkish lectures on the Smith-Trageralogy of English grammar, struggled manfully with our pattern-drills, plus-junctures and barred-eyes, and, mirabile dictu, survived.

Returning via a four-month stint on an old Emek Jezreel kibbutz, some months at the central Berlitz sweat shop of New York, and half a year of delightful labor as an audio-engineer at Consumers Union, I somewhat reluctantly accepted Victor Yngve's offer to return to the University — not much ivy — It was MIT. Yehoshua Bar-Hillel had breezed through and called upon the computer world to graduate from counting numbers to translating natural-language texts. (Not long afterward he was to breeze back again with a theorem purporting to prove the impossibility of machine-translation!) Yngve took his place, accepted an R-and-D grant, and looked for man power. He had chatted with me occasionally back at the University of Chicago on how to persuade the Physics Department to accept his proposal for a dissertation on Machine Translation (they remained unpersuaded). Though his offer of a position for research on the quixotic project was, in my 1956 ignorance, not entirely unpalatable, the major attraction was the possibility of a return to study and a Ph.D. As it happened, our decision to move up to Boston was a turning-point — another in a long series of accidents and minor disasters which somehow turned out each time for the good (a sense of humor is required, of course), but this time particularly auspicious.

Arriving at the Research Laboratory of Electronics for duty, I found several colleagues already at their desks. G. H. Matthews poured over his Hidatsa grammar, J. P. Applegate fussed over German with Yngve, and next door N. A. Chomsky stapled together

dittos of a chapter or two of some obscure work. I fussed over German verbs too, and uttered snide and discouraging commentary on Machine Translation (for which a year later Yngve fired me). We helped this Chomsky collate his dittos. And his mild-voiced time bombs sputtered away in our structuralist souls.

The dittos became *Syntactic Structures*, and I became a transformational grammarian. My review article in *Language* on that parvum opus was, perhaps, the first challenging polemic in our standard journals to signal the beginning of the Chomskyan Revolution in Linguistics.

We had already met once before, when at a cold winter meeting of L.S.A. in Cambridge in the early 50's, an old Chicago friend, Eric H. Lenneberg, introduced Chomsky to me. He sharply disparaged the journalistic doctrines I had brought from the previous summer I had spent in study at the Indiana Summer Institute with Louis Hjelmslev, but he granted that they might at least be "insightful".

Still another friend from the University of Chicago days was beginning to make his influence felt. Morris Halle had been engaged several years previously, ostensibly to develop a speech typewriter at the Research Laboratory of Electronics and to teach Russian in the Modern Languages Division of the Institute. He, I believe, was responsible for persuading Yngve to hire Chomsky, who might have persisted as a Wall-Street formalist in linguistics had not Halle's Jakobsonian leavening fermented so fruitfully inside an otherwise not very yeasty laboratory — a most propitious confluence of Harris's *Methods* and Jakobson's features, of Philadelphia logic and Riga languages.

At that time Harris was seeking legitimate help in spending a sizable grant for linguistic research, and I accepted his invitation to do a research project on his budget (which meant not doing much for Yngve, who continued to pay my salary, a contributing factor, perhaps, in his agonized decision to dismiss me after the year). I studied nominal compounding and tried to construe it as a set of transformations over sentences in order to represent more generally one's knowledge of syntactic relations such as subject, object, modifier, etc. However, to avoid the inelegant assumption that a person simply memorizes each compound he believes his language to allow, I had to idealize the notion of grammaticalness to the extent of regarding an indefinitely large set of compounds not in use to be grammatical (in a given dialect, at a given time). To relate compounds to other nominal expressions and to generalize some of the rules, I was led to study nominalization processes as well.

Chomsky and Halle immediately met the crisis of my dismissal by persuading the head of the Research Laboratory of Electronics, Professor J. Wiesner (later President Kennedy's science adviser, and now President of MIT) to grant me a fellowship; Halle then persuaded the Department of Electrical Engineering to accept me as a

student and to accept an extended version of the compounding paper as a dissertation, and in two years I was ready to be graduated. My committee consisted of Jakobson, Halle, Chomsky, Walter Rosenblith (a student of von Békésy and representative of the Research Laboratory of Electronics), and Peter Elias (representative, and subsequently head, of the Department of Electrical Engineering).

The defense was a memorable occasion. Elder Statesman Jakobson was not expected to attend — would be in Poland — but ominously appeared at the last minute. Why the omen? He was known to have been outraged at a grammatical dissertation which said almost nothing about the long, though not too glorious history of the subject. The first hour consisted entirely of a nearly uninterrupted sequence of questions put by Jakobson to the nonplussed candidate about a score or so of illustrious linguistic scholars of the past several centuries. No one else in the room, except occasionally Halle, and least of all the ignorant electrical engineering candidate masquerading as linguist, could identify any of these professional ancestors or what they had said. At the end of the hour Jakobson dropped a tiny scrap of paper on the table and departed. Halle told me later it contained the one word "Passed".

During the second hour I explained at the blackboard to Elias and Rosenblith what I thought the dissertation was about. There had been a written examination on linguistics, analytical philosophy, information theory, and audition; I offered a minor in algebra. MIT graduated me — the first and probably last linguist the Electrical Engineering Department has ever certified.

Jakobson had, of course, made a valid point, and, comfortingly for me, with good humor — what we called linguistic analysis in those days was indeed crude, and some of us were, or were to become, cruel polemicizers. But Chomsky's revolution has turned linguistics back from its empiricist dead end. Some roots in the past have been found for the new ideas, and Chomsky's name is now anathema in only a few houses. And linguistic research has expanded explosively in several countries, thanks only, in my opinion, to his ideas.

The problem of employment was quickly solved, for just at the time of my graduation the expanding interest of the huge industrial R & D laboratories in language processing opened up a number of positions for linguists, and I accepted a post with IBM. We warned them that a serious linguist was not likely to expend much thought on how to make a computer translate Russian into English. Although they were sincere in their desire to hire "pure" scientists, at least in order to keep up IBM's prestigious image in their field, still the pressures to exhibit practical results were felt eventually, and the intellectual atmosphere was largely dominated by the attitudes and interests of engineers.

Having just finished a dissertation it was not difficult for me to publish a number of papers on related topics and thus help to

publicize transformational grammatical claims. I even managed to fiddle a bit with a computer program, but it never came to anything of importance.

And so, the visit of an emissary from the University of Illinois two years later was very welcome, even the offer of a position in an English department.

When I arrived at the University of Illinois in 1961, the state of linguistics was indeed a strange one, contrasted with the majority of other sciences. A large and influential body of linguists in the world, mainly older scholars, had by then managed to assimilate the basic notions advocated by the Junggrammatiker of, say, 1880 — a kind of mixture of Latinate grammar, i.e. philology, some evolutionary ideas from biology, a bit of inexpert laboratory phonetics, the glimmering of so-called "structuralism" based mainly on a strongly entrenched empiricist dogma about the nature of Science, a growing respect for exotic languages and for anthropology, an abiding disrespect for psychology and philosophy, and no inclination whatever to evaluate or reappraise their methodological doctrines.

There were also a number of "younger" (not always on the calender, of course) linguists with an even stronger intellectual bias toward empirical science and a deep hatred for "traditional grammar," a deep suspicion of semantics and the mind, and an antipathy toward theory and abstraction — great respecters of "hard, cold facts," and often allied to ethnology and field studies; they were, or thought of themselves as the heirs of Sapir, Bloomfield, and de Saussure. Europe and America differed little except in style, slogans, and totems.

The challenge we transformationalists noisily flung down before all was an unmistakable and inescapable exposure of fallacy at the very heart of things, and it took a good long time for the gravity of this disclosure to sink in. We were not always articulate; we did not all speak with the same voice; acolytes and fellow-travelers often distorted the message. Some understood us to have advocated an alternative notation for old ideas. Some thought the structures were important only for computer fanatics. Some feared we wished to mathematicize linguistics or kill off the humanities altogether. And many a structural linguist was (and in a few cases, still is) sure that Chomsky is a modern mystic.

There was good reason for these reactions, even for the acrimony and bitter disputes, for we were experiencing a true "scientific revolution" in the now well-known sense of Kuhn. We Chomskyites were demanding not minor revisions in linguistic practice, not adoption of some new gimmicks, but nothing less than a radical reorientation of the prevailing philosophy of science, a painful, wrenching swerve from our comfortable empiricist doctrine to an unfamiliar, bewildering metaphysics of rationalism. And at the

same time, of all things, we were all to send our friendly Navajo informants back home and start boning up on mathematical logic!

Everything seemed to be turned upside down; formerly a hard problem was one which required nine months of field work in the jungle, or preparing a 900,000-entry slip-file, or a tedious search for every Welsh word in the N.E.D. Now that was all dismissed as so much data collecting, and, after all, we are swimming in data. Now, we are told a REALLY hard problem is one which requires the creation of heretofore unheard-of concepts. Concepts?! Linguistics was supposed to be about words and sounds and subordinate clauses, not about theories, the implicit knowledge of an ideal speaker, the recursiveness of nominalization processes — all philosophy, psychology, mathematics — anything but linguistics.

Yet, now that the dust has settled, we see that, except for a few recalcitrant casualties, we have all made the transition into a new world, and in a sense, linguistics has come of age. Today research flies off in all directions, and every week several bright, young men solve all the problems. The technical literature has long since outstripped any one linguist's ability to stay au courant.

In my own view, none of the currently and often obstinately defended theories of grammatical knowledge is truly serviceable, and I for one, look forward to an early reorientation of our conceptions about what kinds of knowledge we must presume a person to control. It simply cannot be the case that all the constraints on what we can say and understand are correctly formalizable in terms of branching-diagrams of grammatical constituents plus a lexicon of taxonomized morphemes. Some as yet undelimited, and perhaps quite extensive, part of what most linguists have tried to force into such a formulation just doesn't belong to one's LANGUAGE per se but rather to one's beliefs about the world, to one's imagination (conceptualization of other worlds), to one's knowledge of logic, to one's feelings about social propriety or ethical behavior. It elucidates nothing to build into the syntactic or semantic organization of sentences arbitrary cases of non-linguistic constraints (our notations are so powerful that that can always be done quite easily); such linguistic imperialism merely conceals the relevant principles which govern our non-grammatical mental powers.

Thus I am hopeful for efforts, just beginning now, to formulate the relations between grammar and logic, between grammar and the perceptual mnemonic, learning, and processing constraints studied by psychology, and between grammar and the vicissitudes of social history. But such studies will have to be conducted by real professionals — philosophers, logicians, psychologists, and linguists — brighter, younger men of the coming decades.

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Three Linguistic Reincarnations of a Kashmiri Pandit

Braj B. Kachru

I shall start this note with a non-linguistic aside. It was in the winter of 1961 that I first met Robert B. Lees in the Faculty Club of Edinburgh University, Scotland, during his two-day visit to that University. In the typical Leesian manner, he left two distinct impressions on the rather tight-lipped group of British linguists: the first, of being a missionnary-at-large for the then impatient, vocal, and brisk Transformationist school, and second, his typical verbal capacity for intense shock treatment. Those who know Lees know very well that his linguistic discussions are replete with non-linguistic asides. It is these asides which either bring people close to him or convince them not to cross his path again. The first Leesian aside — for there were hundreds more to come in later years — left a distinct mark on me. It was a casual remark perhaps consciously uttered to shock the middle-aged members of his not-too-sympathetic British audience. While mentioning the work of several very young members of the transformational CLAN (for that is what it was in 1961), there was a mischievous spark in his bright eyes when he said, "You know, linguistics is the discipline of the young. When one is forty one should stop doing linguistics." If this Leesian aside is to be taken seriously then the tone of this note should be one of linguistic auto-obituary, for I was born on May 15, 1932. Thus I have already crossed the crucial year.

In deciding to use individual profiles to develop the linguistic profile of the Department of Linguistics at the University of Illinois, Henry Kahane has provided an opportunity for ego trips; psychologically this might help in a retrospective look at one's self and also at the department. This note is, therefore, mixed with nostalgia and historical tidbits. Some of these are personal and some, I think, are helpful in unfolding the linguistic spectrum at Illinois. In order to bring this personal chronicle to the foreground, some background information may be in order.

In the Indian context (I suppose as well as anywhere else), among other things, several RIGHT things should happen to a person at the time of birth. For example, the place of birth should be right, the caste should be right, and the family should be right. I don't know if all these things were right for me, but they were vital.

I was born in Srinagar, Kashmir, India, in a Kashmiri Pandit family. Being a Kashmiri Pandit is like being a Jew in several ways. Incidentally, there is a theory that claims that the Kashmiris represent the lost tribe. Whether we are the lost tribe or not, is not important. What is crucial is that the Kashmiri Pandits have the psychological, cultural and identity problems of a very small minority. The Kashmiri Pandits are not a minority in the sense in which this term is generally understood, since among over five

hundred million inhabitants of India, Kashmiri Pandits are around seventy-five thousand. It is perhaps their stamina and God's sense of humor which prevented their complete annihiliation. They would then have become an interesting minor anecdote in India's three-thousand-year history. Kashmiri folklore tells us that once they came close to complete destruction; they were persecuted and reduced to eleven families. They not only survived, but they survived with a vengeance, as a constant irritant. They also developed all those characteristics which, understandably, such a minority develops. In passing I should mention that it is not accidental that in the Kashmiri language *pandith* (pandit) refers to one set of characteristics of this minority, and *bat,ika:kh* refers to another set of characteristics. Let us not disturb this can of worms any more, for thereby hangs a tale.

A typical Kashmiri Pandit family used to be something of a commune — the commune was not really a discovery of dissident western youth. My father lived with his two brothers and their families in a four-story stone house. I was never able to count the total number of rooms in this house, but neither did we ever count how many of us lived in it. It was always a festival for the children, since the family had been very productive — again the minority complex. In addition, we would be joined by a host of kids of relatives who lived on the two banks of the river Jhelum, in the City of Seven Bridges — as Srinagar used to be called. The mothers didn't know if their kids got fed, and the kids were not supposed to know who were their actual parents. The head of the family and his wife were considered the PARENTS, and often, their names were used on official documents. In fact, when our joint family broke up in 1946, the legal sorting out of parenthood took considerable time. The children were taught to show deference to age, and the eldest in the family had the honor of being considered parents. Again, this is a digression not directly relevant to a linguistic profile.

In 1952, when I graduated from Sri Pratap College with honors in English literature, it came as a shock to several people, including many members of our family. The reason was that the doctors had given me up as a patient of rheumatic heart disease and had kept me bedridden for several years. Later, in Edinburgh, I found that the diagnosis had been wrong. So my early years were spent doing what a heart patient usually does — learning to paint, doing some light reading with private tutors, or just whiling away the time. The result was that I never went to school until 1948, when I found myself in a junior college as a shy kid perspiring under the gaze of over sixty students learning English, Sanskrit, history and economics from professors who made it obvious that they didn't enjoy the experience of teaching.

In 1953, I went to Allahabad University for my Master's degree in English literature. At that time it was the place where the intellectual action was to be found. It was politically stimulating and full of anti-British intellectual (and physical) activities; it was the

center of the so-called "Hindi movement" and it was also the center of the creative upsurge and experimentation in Hindi literature. Since my ambition was to become a creative writer in Hindi, I couldn't have made a better choice. The University of Allahabad had a reputation of being the Oxford of India. During those days we always had to have a British model! That Oxford of India is now in shambles both physically and academically. In the fifties, the English Department there had scholars such as P. E. Dustoor, Harivanshrai Bachchan, S. C. Deb and R. S. Firaq. All of them had distinct, individual characteristics, and all of them were distinguished in their fields. It was at Allahabad that I was first exposed to what may be considered an academic atmosphere. The Department of English at Allahabad exposed me to several things. First, how inadequately students are prepared for the study of literature at the MA level. Second, how the teaching of literature is done without any rigor or theoretical foundations. Third, how crucial it is to have training in language — linguistics, especially when one is teaching a foreign or second language. The real stimulation to go in the area of language and linguistics came from an outstanding teacher and scholar, P. E. Dustoor. It was due to his encouragement that I was indirectly thrown into the lap of Structuralism. (But then, it was already 1955!)

My first encounter with Structuralism was at Poona, where the Linguistic Society of India and the Deccan College Postgraduate and Research Institute had initiated linguistic institutes with funding from the Rockefeller Foundation. It was at one of these institutes that I first met senior American linguists such as Henry A. Gleason Jr., Charles F. Ferguson, Henry Hoenigswald, and Gordon Fairbanks. It was also just at this time that the United States had discovered South Asia and the social scientists were flocking to find the answers to questions such as the exact number of castes in India, or the workings of an Indian Village. The group also included several young linguists, e.g. William Bright, John J. Gumperz, John Kelley, and Norman Zide.

The enthusiasm of the Structuralists was contagious. If we found an allophone in a language it was like holding a newly born baby delivered by phonemic caesarian. The atmosphere was full of attacks on the 'traditionalists' and challenges were thrown to traditional Pandits who had spent their lives studying Sanskrit, Pali or other Indian languages. It was there that we were exposed to the academic grouping and divisions in linguistics. If we went to Sukumar Sen (the Khaira Professor of Linguistics of Calcutta University) with a problem in linguistics, his pat answer was, "Why don't you go and ask your American friends." There was the usual disgruntled group among the Hindi language scholars, who accused the whole linguistic operation and Structuralism as an attempt by the Americans for cultural domination of India.

In 1957, I was selected as a Fellow of Deccan College Research Institute for a year's training in linguistics. The American visiting

scholar for that year was Henry Gleason, Jr.; it was like getting structural linguistics from the horse's mouth.

In retrospect I can think of several things that happened at these schools. One is that for the first time I looked at my mother tongue, Kashmiri, with an entirely different language attitude. The earlier, typically Kashmiri, attitude changed to one of treating it as a HUMAN language which could be an area of serious academic and intellectual research. Second, I had an opportunity to think seriously about Indian English; its status, roles, and academic position.

In 1958, when I had just finished my tenure at Poona, I was selected by the British Council for specialization in linguistics at Edinburgh University in Scotland. The British Council tried to make our transition smooth and cushioned the culture-shocks by a one-week orientation course. The orientation had both serious and hilarious aspects. One morning a beautifully dressed, efficient-looking person gave us a talk on how to break a boiled egg for breakfast. I was fascinated by his impeccable Received Pronounciation (RP) and was unmindful of the fate of the egg. RP had been a mystical goal which all the nonnative speakers of English were persuaded to aspire to; the word *received* always intrigued me. Received by whom? It was much later that Ruqaiya Hasan solved this riddle for me when she said, "Received by Almighty God." We were trained how to use forks and knives with distinction. It was there I learned, for example, that a fork should not be used as a weapon to win an argument, and that a knife should not be used as if one is slicing the air to emphasize a point. In later years, I found that this same information had been elevated to an academic level internationally in the programs on the teaching of English as a foreign language, under the "cultural component." After a week's cultural (and social) orientation, the Council thought that we were ready to face British (or Scottish) culture. There was the typical British challenge — sink or swim.

Once at Edinburgh, I found that, linguistically, I had to go through two processes at the same time: the first, of learning the new paradigm, and the second, of unlearning the earlier paradigm without even leaving any 'substratum.'

There was a distinguished group of linguists at Edingurgh. J. R. Firth (1890-1960) had retired from the Chair of General Linguistics at London University in 1956. It was the first Chair of General Linguistics in Great Britain established in 1944, and he was its first occupant. During my first year at Edinburgh, Firth was there as a Visiting Professor for a term. Michael Halliday had just left Cambridge University to take a position at Edinburgh in what was then the Department of English Language and General Linguistics. He was already well-known both as a political and linguistic radical, and his study, *The Language of the Chinese "Secret History of the Mongols,"* was being seriously discussed in linguistic circles. J. C. Catford was Director of the School of Applied Linguistics, attempting

to give new direction to APPLIED linguistics. Angus McIntosh, David Abercrombie, Peter Ladefoged and Peter Strevens were also contributing to the program.

Since Firth had spent eight years in India (1920-1928), and since, at that time, I was the only Indian student in linguistics at Edinburgh, he took a personal interest in me. In his unique way, he would talk for hours and fill me in on the personal, political and linguistic history of the members of what was then called the "Firthian" or the "London" group of linguists. I would sit in front of him (one seldom got a chance to discuss or converse with Firth) both bewildered and dazed, listening to his impressions about Indian English. It was there, listening to him, that my ideas about Indian English, and the non-native varieties of English in general, began to be structured. (I guess Indians really need gurus!)

At these sittings, I also learned that two distinct types of linguistics were developing on opposite sides of the Atlantic. In 1958-59, the Firthians were still flogging the structural horse. The transformationist (Chomsky) group was still not recognized, and Harris was considered out in the left field of linguistics. This divergence in approach would sometimes show itself in interesting ways. For example, Angus McIntosh did not like my use of the term "phoneme" in my thesis proposal. I was told that I should use the term "phonematic unit". In linguistics the term phoneme was used for a long time as a sort of caste mark — it marked you either in the "in group" or "out group."

Michael Halliday did not bring the theoretical differences to class, he merely presented HIS point of view. His seminal paper "Categories of a Theory of Grammar" (*Word*, 17.3, 1961) was written and discussed primarily during this period.

In the Indian tradition, we are taught to learn from a teacher by "sitting at his (lotus) feet." The *śiṣya* and *guru* concept is deeply rooted in us. A Western teacher, who does not understand 'inscrutable India' is confused by the docility, unarming humility, and blank look of an Indian student. I have heard hundreds of interpretations of this attitude of Indian students from my Western colleagues. And, I would say to myself, "here again, the mystic East confuses them." I guess I was not much different from the typical Indian student finding his way in the Scottish educational system. But there was a difference.

Firth loved to perform like an Indian guru, and Halliday had been seriously exposed to the mystic East in China. Therefore, he understood the limitations of a new oriental student in a Western classroom. Firth's personality was multifaceted. In a sense, one facet of Firth represented the typical Britisher with the *raj* mentality. But, on the other hand, India had played its three-thousand-year-old trick on him; it had worked the process of Indianization on him — the first step toward assimilation. But in some ways he was so British

that the Indian trick would not have completely worked on him. He had imbibed several characteristics of the typical *sahib* who had lived in India too long. In linguistics, as in everything else, his likes and dislikes were too strong.

In the late fifties Edinburgh had perhaps the most stimulating atmosphere for linguistic studies. During his stay, J. R. Firth gave the classes a crispness and character. Michael Halliday was both innovative and inspiring. He had the unique quality of bringing out the best in every student. David Abercrombie was a superb teacher who taught us Henry Sweet with the zeal which traditional Pandits use for the teaching of Pāṇini. His seminar could have only six students since there were only six chairs in his office!

In this stimulating atmosphere, I completed my Ph.D. thesis (in Britain it is not called a dissertation) on some linguistic aspects of Indian English under the supervision of M.A.K. Halliday and J. C. Catford. It is usual to feel a vacuum after finishing a Ph.D. thesis. I spent several months working in the Phonetics Laboratory for which every Friday (payday) I received a sealed brown envelope with my wages. These wages helped me to continue to sit in Michael Halliday's seminars in his overheated tropical room and look at the icicles in George Square. We had a small but very stimulating circle of graduate students who interacted both linguistically and socially. Among others, the group included Hanna Ulatowska, Rodney Huddleston, Ayo Bombose, Ruqaiya Hasan (now Mrs. Halliday), John Mountford and R. W. M. Dixon. Dixon's status was not quite that of a student — he used to straddle the fence between groups and read us sections of his forthcoming book, *Linguistic Science and Logic*, (Mouton 1963).

Semantics and phonetics were relevant and exciting areas of linguistics, and one didn't have to use the side door if one was a phonetician. In fact, when sociolinguistics became a popular bandwagon in America, Halliday made the apt remark, "What is now sociolinguistics in America, was always linguistics for us."

By now I had already spent three years in Edinburgh and had passed through several academic and cultural experiences. One, that of going from (pure) literature to language (1954). Second, passing through an intense period of Structural linguistics with all the leading gurus. Third, passing from Structuralism to Firthian-Hallidayan linguistics. The question was: What next?

It is here that Lees comes into the picture. In that 1961 meeting, Lees and I had a fascinating discussion. I guess for an Indian — anthropologists tell us that we are full of humility and deference — I was rather forthright and less tight-lipped than others who had dinner with him in a pseudo-Indian restaurant. But then, what other mode of communication could be used in talking with Lees during that period? If he was not abrupt, he was ironical; if he was not ironical, he was caustic. Above all, he was the typical Lees, with the

mischievous smile and kind eyes, watching and observing everything.

A few months after Lees' Edinburgh visit, Halliday received a letter from him asking if he could recommend someone for a possible opening in his linguistics program at Illinois. As a postscript, he inquired if the "Indian boy" he had met at Edinburgh would be interested in the position. Yes, I would be interested in the position, but a year later, was my reply to Lees. I had already accepted a position to initiate a program in applied linguistics at Lucknow University in India. Lees agreed to defer the offer for a year, and in 1963 I went to Urbana, right in the middle of a new culture, new linguistics, and a new phase of my life.

The process of learning and unlearning linguistics started again. It was like trying to move from one caste to another caste and being conscious of it all the time. I guess intellectual (or religious, for that matter) conversions can be painful. It was challenging to share with Lees and with a part-time assistant a small room in the Department of English where we were a Program. How we changed from a Program to a Department has already been discussed by Kahane and Osgood, and I shall not repeat it here.

The sixties were a period of youth in linguistics; a generation of linguists was being retrained and reoriented in a fast-changing discipline. In this process some survived, some became a part of the new movement, some copped out, and many either disintegrated or became bitter and cynical.

Illinois was in the forefront of the new "revolution." I was fascinated and awed by the overcharged linguistic activity here. I spent a lot of time in classes, trying to understand the fast changing paradigm. I also published several papers on my pet hobbyhorse, Indian English. The reactions to these papers varied, and a controversy was generated. In the beginning, the Indian scholars — and also some non-Indians — did not accept the identity of Indian English. You could not claim an ontological status for a foreign language. How sad that the transplanted languages never seem to grow roots! It was another manifestation of linguistic schizophrenia in India, and it took several years to attain academic acceptability for "Indian English". In my papers the processes of the INDIANIZATION of English were discussed and INDIAN English was considered a "culture-bound" language which must be studied in the Indian socio-cultural context. The Firthian (and Malinowskian) concept of "the context of situation" was considered crucial for such a study. I adopted the same position for other non-native varieties of English as the Chairman of the Committee on Regional Varieties of English at Brisbane, Australia. Later this model was adopted by several students who concentrated on various aspects of Indian English. This interest naturally led me to sociolinguistics in general. It was during this period that we also initiated linguistic projects on several Indian languages.

In teaching, my primary thrust was toward developing the applied linguistics program, using the term "applied" in a wider sense. In developing such a program, one was fighting against several problems. In America, APPLIED linguistics had been reduced to some uninteresting aspects of language pedagogy. A person interested in APPLICATION of linguistics was suspect in the new paradigm — and there were good reasons for this suspicion. Initially, Lees and I did not see eye to eye on this part of our curriculum, but then he left me alone. In this background, therefore, it was challenging to initiate and teach courses such as Introduction to Applied Linguistics, Sociolinguistics, Stylistics, and South Asian English. My other interest was the history of linguistics. Since an Indian always carries the burden of three thousand years of history on his back, the historical development of ideas fascinates him. In the sixties, however, the attitude of the linguistic radicals was that linguistics as a discipline REALLY started in 1957. It was unconventional and old-fashioned to suggest that a course on the history of linguistics be taught in a department whose focus was on new linguistics. If such courses were taught, these were labeled "bad guys" courses. On my part, therefore, it was "linguistic antiquarianism" when I first taught such a course, and I continued to teach it until Ladislav Zgusta joined the department and willingly agreed to share my antiquarian interest. Thus, during the early sixties, if you talked of applied linguistics, sociolinguistics, or history of linguistics, you were the lowest of low caste shudra on the linguistic totem pole (certainly not a desirable position for a Saraswat Brahmin!). It did not take linguistics too long to enter the phase of neo-transformationism and neo-Firthianism. The actors on the stage changed, and so did the focus of interest. We now have the PURISTS and NON-PURISTS. We have lexicalists and non-lexicalists on this side of the Atlantic, and, on the other side, we have, among others, the "Firthians" and "neo-Firthians." Membership in a group is not given without challenge, and this has added more interest to the polemic controversies. Consider the following remark of F. R. Palmer about Halliday:

> Today Firth's name is linked with M.A.K. Halliday's 'neo-Firthian' or 'Scale and Category Grammar' which Halliday explicitly states in his "Categories of a theory of grammar" to have derived from Firth. But Halliday's essentially monosystemic categorization seems to me to have little in common with Firth's approach. (F. R. Palmer, ed., *Selected Papers of J. R. Firth 1952-58*, 8-9, 1968, Bloomington).

The main characteristic of this period is that the much maligned and ignored area of semantics came back to the forefront of linguistic investigation. In America, one heard of 'conversational postulates,' 'context,' and 'appropriateness.' It was like going back to Firth's class in 1958-59. Linguistic antiquarians started going through the literature on our discipline, and found that these concepts were very close to Bhartṛharis' *ākaṅkṣā*, *yogyata* and *sannidhi*. Whitney,

Jesperson, and Henry Sweet — in short, the whole earlier linguistic tradition — were being studied with interest. And one wondered if Firth's concept of "contextualization" was not worth revisiting. I keep bringing up these names from the past since each linguistic "reincarnation" has left its impression on me.

By 1968, the young team of linguists such as Ken Hale, Chin-W. Kim, Ted Lightner, Arnold Zwicky, and, of course, Lees, had already put Illinois on the linguistic map. Among the Ph.D's Illinois produced during this period were LeRoy Baker, C.-C. Cheng, Austin Hale, Charles Kisseberth, Ronald Langacker, Frederick Newmeyer, and Jerry Sadock. They took the positive image of Illinois to the leading institutions where they were hired.

In 1969, Lees made the decision to move permanently to Tel Aviv University in Israel in order to initiate a program in linguistics there. This decision was again in line with Lees personality — an urge for something new and challenging. In September, 1969, I was offered the position of Head of the Department, which Lees had occupied with distinction since the beginning of the Department. The new role I accepted was both challenging and awe-inspiring. There were several questions facing us, but the primary one was: What should be the future direction of the Department? In a sense, the Department was going through a reincarnation (or, was it disintegration?). Ted Lightner and Arnold Zwicky left at the same time as Lees. Budget constraints were suffocating higher education, and Illinois was not left untouched by all this. The linguistic scene had again changed in America. And, here we were, attempting to revitalize a program!

The linguistic revolutionaries of the sixties — primarily the Transformationists — were close to their forties. If we followed Lee's dictum, they were close to their retirement from ACTIVE linguistics. A new generation of their students had emerged on the linguistic scene. At this point, in line with our earlier Illinois tradition of "radical" linguistics, we decided to invite a young team of fresh, energetic, and innovative scholars to the Department. In working out these plans, I had the cooperation and advice of three persons representing three areas: Henry Kahane, a historical linguist; Howard Maclay, a psycholinguist; and Chin-W. Kim, a phonetician and phonologist (he really does not mind being called just a phonetician!). The first thing we did was to hire one of our students, Charles Kisseberth. Then came Herb Stalke, Jerry Morgan, Georgia Green, Chin-Chuan Cheng and Michael Kenstowicz. It did not take them too long to make their presence felt in the profession and infuse graduate students with new ideas. Kisseberth's note (see Section VI) has discussed their contribution in detail. Michael Geis (who later left for Ohio State University to become Chairman of the Linguistics Department there), Yamuna Kachru, and Hans Henrich Hock were already members of the young team. In 1971 Ladislav Zgusta joined us after an adventurous escape from Czechoslovakia. He brought with him some

fresh East European air, and his typically European scholarship. In order to announce our "reincarnation," we started a house journal, *Studies in the Linguistic Sciences* (*SLS*) and a Newsletter. *SLS* has become a highly respected journal in our profession.

Once the team was put together, the next question was: How should the linguistic spectrum unfold itself at Illinois? Again, continuing the earlier tradition, we decided to have a strong contemporary orientation. But we also agreed to present all the aspects of the spectrum of the linguistic sciences at Illinois. We initiated an area-oriented program in linguistic offerings. Herbert Stahlke was invited to offer African linguistics; C,-C. Cheng, Chin-W. Kim, Seichi Makino, and Frederic Lehman offered courses in Far Eastern linguistics; Yamuna Kachru and I added courses in South Asian linguistics. Recently, Peter Cole, a graduate of the Department, joined the faculty for Semitic linguistics. The areas of applied linguistics were strengthened and expanded; specialization is now available in historical linguistics, sociolinguistics, mathematical linguistics, computational linguistics and lexicography. Charles Osgood and Howard Maclay have further developed a strong program in psycholinguistics and language acquisition. In short, the manifestations of language — in all its aspects — are under study and, like *Vāgdevī*, the goddess of language, one wonders at the immense potential and infinite awe of human language.

In linguistics, usually every ten years brings new linguistic thinking. It is both healthy and fascinating, and demonstrates the vitality of our discipline. The final question now is: Can linguistics at Illinois keep up with the new paradigm that might come up in the next ten years? The answer to this question is difficult, since in the next ten years my present vocal linguistic colleagues will be in their forties and, I should guess, will be writing THEIR linguistic auto-obituaries.

(*Received March 1974.*)

A Sense of Perspective

Charles W. Kisseberth

From the time I was ten I wanted to write novels. Beginning about the age of seventeen I wanted to write richly philosophical novels about the human condition. As the years passed, I settled more and more for the academic study of literature and philosophy, drifting finally into a M.A. degree in English literature. I accepted a teaching position at the college level in Ohio, and thoughts about the great American novel were submerged in teaching freshmen how to write their weekly theme. It was during this period that I had my first exposure to linguistics: Robert Hall's *Leave Your Language Alone!* was one of the freshman English textbooks we used. In the course of casual reading I even came across a little blue book called *Syntactic Structures*, but was rather easily frightened away.

In the Fall of 1966 I entered the Ph.D. program in English at the University of Illinois, but almost immediately decided to switch into the Department of Linguistics. I enrolled in a couple of elementary linguistics courses and audited a couple of others. I began to spend long hours in the "conference room", which was the site of much animated discussion among linguistics students: I listened most of the time, said very little, and managed to learn a great deal. Almost the first student I met at that time was Michael Kenstowicz, who had entered the Department that Fall and who later was to join the Illinois faculty with me.

The enthusiasm of the linguistics students and faculty, the smallness and the intimacy of the department (in striking comparison to the gargantuan English department), the youthfulness of the field and of its leaders — all of these things appealed to me greatly. It seemed as though here was a field of study where papers and theses that students wrote were not just academic rituals, of no earthly interest to anyone at all, but rather were potentially significant documents that might well find a place in the rapidly expanding "underground literature", then so characteristic of transformational grammar. One wrote with the expectation of being read. One didn't have to be a graybeard to join the ranks of the "scholars" — for the names that recurred most often in classes (in addition to Chomsky and Halle, we heard most about Haj Ross, George Lakoff, Paul Kiparsky, Jim McCawley, Paul Postal, etc.) were largely the names of very young scholars. In many cases they were people exactly of my age. It was all very intoxicating.

In 1966-67, the transformational camp of linguistics was still in the era of good feelings. The "bad guys" had been routed and all of the "good guys" were still good guys. MIT was still mecca, Chomsky and Halle were still the voices of authority, and what now seems a quite unhealthy smugness reigned: just as the taxonomic dragons had been completely vanquished, Language would soon follow. The

dominant mood appeared (at least to me, as a beginning student) to be that armed as we now were with deep structure and transformations, ordered rules and cycles, etc., it was just a matter of time before each problem of language structures would be confronted and reduced to a simple set of very general principles. While mention was often made of the complexity of language, I do not think that we were yet (in 1966-67) being taught to view language with sufficient awe.

There was much about that period to be regretted: the arrogance with which we tended to ignore all but those on the inside — Chomsky and Halle, or their students; the unfortunate manner in which 'theoretical' contributions to linguistics became the end-all of doing linguistics, and 'data-collecting', even if well done, something of no significance. Nevertheless, it was a period that was tremendously exciting to a new student. The smallness of the number of active transformational grammarians at the time, and the closeness of the ties among them, meant that leading figures in the field did not remain mere names, but very often materialized on campus. For example, Ross came early in the year 1966-67 and gave a most remarkable series of non-stop lectures on syntax, including the now famous demonstration that underlying the sentence "Floyd broke the glass" is a deep structure containing eight (or is it eleven?) clauses. I recall vividly the awe with which I listened to these lectures, understanding almost nothing, but feeling deeply the excitement and the brilliance of the man at the blackboard.

The sense of being close to the center of things, of being in at the very beginning of new developments, contributed much to the excitement. For instance, during my second year of study a letter from Ross and Lakoff to Arnold Zwicky (who, along with Ted Lightner, was primarily responsible for teaching me linguistics during my student days at Illinois) asked the then heretical question: Does deep structure exist? By Spring 1968 the controversy over a transformational versus a lexicalist account of nominalizations was one of the focal points of Zwicky's advanced syntax class. The summer brought the annual Linguistic Society of America Summer Institute to the Illinois campus, and the syntax courses were being taught by Ross, Lakoff, and McCawley. The split between the Generative Semanticists and the Interpretivists was a constant theme of that summer. A new set of bad guys had developed.

It was during that Institute that I first met two subsequent colleagues — Georgia Green and Jerry Morgan. They were students of McCawley's at Chicago, and had come south to Champaign-Urbana for the Institute. People with a really good control of syntactic argumentation, people with a flair for picking sentences out of thin air that support or contradict some hypothesis, always amaze me. The student at Illinois who most amazed me in this respect was Jerry Sadock (who himself was later to join McCawley on the Chicago faculty). Georgia Green and Jerry Morgan similarly awed me that

summer. In fact, observing their very obvious skills made me feel sufficiently insecure about my own abilities to question whether I should attempt a thesis in the area of syntax (as I had originally been planning). I ultimately discussed the question of what I should work on for my thesis with Ross, and when he suggested I do phonology (doubtless to save me from a fiasco), I decided to follow his advice — and left syntax to those who could do it well.

The year 1968-69 I spent in the Boston area, attending classes at MIT (Halle, Ross, Chomsky), at Harvard (Lakoff), and at Brandeis (Perlmutter), and trying to write a thesis. The notion of "conspiracy" was being discussed in the area of syntax by Ross and Lakoff that year, and I felt that it had considerable relevance to phonology. It was Halle who suggested that a study of Yawelmani might be the source of evidence for the claim that diverse phonological shapes will have a specified character. The thesis that I ultimately wrote, as well as my first real paper in the area of phonology, were the direct outgrowth of Halle's suggestion.

During my stay in Boston, changes were in the works at Illinois. Lees had decided to take a position in Israel; Lightner accepted a position at Texas and Zwicky at Ohio State. Although this massive departure was viewed with alarm by many, I had selfish reasons for being not altogether displeased: I wanted to return to Illinois to teach. The mass exodus made this a possibility. As it developed, I was offered and accepted a teaching position at Illinois for the next year. One other person was hired at this time — Herb Stahlke, an Africanist from UCLA.

Although the staff had been largely decimated, Illinois still felt like home to me. Many of the students had been fellow students of mine. In particular, Michael Kenstowicz was working on his thesis at the time, and a regular interchange of ideas about phonology was quickly resumed. We had both been trained within an atmosphere where phonological analyses were highly "abstract", in the sense that proposed underlying structures deviated radically from the surface forms (and generally matched the surface forms of much earlier stages of the language) and a complex set of rules (generally recapitulating historical sound changes) related these abstract deep structures to their surface realizations. We both joined the rebellion then developing against this sort of analysis, motived as it was almost entirely by "simplicity", the desire to capture "significant linguistic generalizations". We did not necessarily join those who assumed that phonology must necessarily be extremely "concrete" (i.e. that underlying forms did not deviate very much at all from surface forms). But we did want to explore more deeply the question of whether the "significant linguistic generalizations" that abstract phonology had found were in fact significant to speakers of languages, or whether there were other generalizations that were also of importance. For example, abstract phonology worked under the basic assumption that the "best" analysis is one where

phonological alternations are described by rules that have only phonological conditions governing their scope of application. Rules restricted to particular morphological structures are less preferred. We were interested in the validity of such assumptions. Could there not be conditions under which phonological alternations very NATURALLY lose their phonological basis, for instance, and come to be controlled by grammatical conditioning?

During my first year of teaching, plans for developing the faculty further were being worked out. A position for Kenstowicz eventually materialized. We were also able to persuade Chin-Chuan Cheng to join the staff; he had been a student in the department earlier and had written a dissertation on Mandarin Chinese phonology. Before coming back to Illinois, he did research at Harvard and Berkeley, working with William Wang at the latter institution. With the addition of Kenstowicz and Cheng, the department was in a strong position in the areas of phonetics and phonology. In Chin-Wu Kim, who had come to Illinois during my student days, we had clearly one of the leading phoneticians in the country; but his accomplishments were even greater — he was equally well-versed in phonology, and was actively pursuing the phonological investigation of Korean. In Herbert Stahlke we had a linguist with an extensive knowledge of the phonological structure — and especially the tonal structure — of several African languages. In Hans Henrich Hock we had a man thoroughly trained in the traditional approaches to Indo-European, but with a rapidly developing interest in synchronic as well as diachronic phonological investigation of several Indo-European languages — in particular, Sanskrit and Lithuanian. In addition to these linguists within the department who were actively concerned with phonetics and phonology, there were two others outside the department with whom we had very extensive contact — Mario Saltarelli and Dieter Wanner of the Spanish, Portuguese, and Italian department. Both of these linguists are highly productive researchers in the phonological structure of Romance languages. Thus, although the teaching of the general phonology courses came to fall in the hands mainly of Kenstowicz and myself, the extent of the department's commitment to phonology has been immensely greater.

The principle weakness at this point in the department's program was syntax/semantics, but fortunately that weakness was instantly solved when an arrangement was worked out that brought both Georgia Green (first as a fellow in the Center for Advanced Study of the University of Illinois, later on a regular line) and Jerry Morgan to the department. With the arrival of these two, Illinois became one of the focal points of the new concern with semantics, for they were the first fruit of McCawley's teaching, and it was McCawley who was so instrumental in bringing semantics to the forefront of research.

The faculty that was now assembled to teach the core courses in phonology and syntax/semantics all shared much in the way of a

common experience and a common reaction to that experience. We were all trained in linguistics during roughly the same period, we were all students of the first generation of transformationalists, we all gained the necessary control of the concepts and methods of transformational grammar but also learned to think critically about these concepts and methods, we all developed a healthy skepticism about formalism, we all developed an appreciation of really good data collecting. And I hope we all learned not to take ourselves or our pet theories too seriously. And at the very least we learned to stand in the proper awe of language.

Transformational grammarians have always been interested in Language. But the study of Language must be done through the study of languages. And in the beginning, it was mostly English that was the source of insights into Language (this was especially true of the study of syntax, of course). Linguists working within the transformational framework have more and more come to believe that the structure of one language cannot be properly understood unless the linguist avails himself of the knowledge provided by a study of similar phenomena in other languages. The advantages of a cross-linguistic perspective are now very generally accepted. One of the principal virtues of the Department of Linguistics at the University of Illinois is the extent of its involvement in non-Western languages. A certain international, particularly a non-Western outlook was naturally fostered by the presence of a head from the Indian sub-continent. This outlook was strengthened by the presence of a substantial number of faculty with a special interest in non-Western and rare languages — Hans Henrich Hock (Sanskrit), Yamuna Kachru (Hindi), Braj Kachru (Kashmiri and Hindi), Chin-W. Kim (Korean and Swahili), Chin-Chuan Cheng (Chinese), Herbert Stahlke (Ewe, Yoruba), Peter Cole (Hebrew), Ladislav Zgusta (Hittite), Jerry Morgan (Albanian). The teaching of these languages has made it possible to support the graduate study of a large number of linguists from abroad, which in its turn has meant that much of the linguistic research of the department's students has been directly focused on non-Western languages. If we accept that a cross-linguistic perspective is necessary to the analysis of any given language, then clearly one of the main tasks of any linguistics department is to train native speakers of a variety of languages to do careful and thorough research into these languages so that the relevant kinds of information about their structure will be available to linguists in general. There is, of course, much already known about the linguistic structure of such relatively well-known non-Western languages as Hebrew and Hindi. But the kinds of questions that linguists are seeking answers to currently are often highly articulated, requiring very specific types of information that cannot be found in existing descriptive materials. The necessary ingredient to a successful utilization of a cross-linguistic perspective is the training of linguists who can unearth the pertinent aspects of the structure of their

native language. It is such a training that we are attempting to provide.

The linguistics program at Illinois seems to me to be characterized by a high degree of cohesiveness (based on the shared experience of many of us), but at the same time an openness of spirit; an intense desire to keep from becoming shackled to familiar ways of thinking, to old questions; most of all, a sense of perspective.

(*Received March 1974.*)

PART II

Memorial Tributes to a Builder: Henry R. Kahane

A

Memorial Tribute

to

Henry R. Kahane
November 2, 1902 - September 11, 1992

Center for Advanced Study
Professor Emeritus of Linguistics

Saturday, November 14, 1992
2:30 P.M.

Tryon Festival Theater
Krannert Center for the Performing Arts
University of Illinois at Urbana-Champaign

Musical Prelude:
César Franck:
Symphony in D-Minor, First Movement

Elmer H. Antonsen
Head, Department of Linguistics

Roberta Kahane Garner

Morton W. Weir
Chancellor
University of Illinois at Urbana-Champaign

Ladislav Zgusta
Director, Center for Advanced Study
Representative, Linguistics Society of America

Larry R. Faulkner
Dean
College of Liberal Arts and Sciences

Charles Kahane

Braj B. Kachru
Former Head, Department of Linguistics

Reception:
South Main Lobby, Krannert Center

Henry R. Kahane
November 2, 1902 - September 11, 1992

Introduction

This part includes memorial tributes paid to Henry R. Kahane on November 14, 1992 at the Tryon Festival Theater, Krannert Center for the Performing Arts, University of Illinois at Urbana-Champaign. Professor Kahane peacefully passed away at his home (808 West Oregon, Urbana) on Friday, September 11, 1992. He was professionally active until almost the last day of his life working on various projects, meeting friends and engaging in intellectual discussions. He would have been ninety years old on November 2, 1993.

The secular memorial service was attended by a large number of Kahane's colleagues, friends, students, and admirers. The memorial tributes were paid by five members of the University of Illinois and, Professor Kahane's daughter, Roberta Kahane Garner, and his son, Charles Kahane.

Elmer H. Antonsen: Head, Department of Linguistics, University of Illinois at Urbana-Champaign

Henry Kahane was our mentor, our colleague, and our friend for most of the days of our adult lives. He had become, or so it seemed to us, such a permanent feature in our intellectual landscape that it is difficult to grasp his absence.

In German academic circles, from which Henry ultimately sprang, the common designation for a dissertation advisor is *Doktorvater*, literally 'doctoral father'. Henry was certainly the intellectual father of many a doctor of philosophy, but he was also something no other can claim to be: he was both the father and the midwife of the Department of Linguistics at the University of Illinois. He laid all the groundwork for the Department and devoted enormous energy and a great deal of time in seeing it successfully born, but in characteristic modesty, he did not seek appointment as its first Head. Only much later did he serve a brief term as Acting Head. He brought great distinction to this University through his scholarly activities, which won him high office in academic societies, memberships in scientific academies, and honorary degrees from a number of illustrious universities. A bit of this glory rubbed off on us, who were fortunate enough to know him and to work with him. But it is not this side of Henry Kahane I want to talk about, but rather about a side not recorded in any Who's Who.

My association with Henry Kahane began in 1958, when I was a graduate student in what was then called the Department of German. Before the fall semester began, the chairman of that department, Professor Frank Banta, who was also a linguist, called me to his office to discuss my graduate appointment. To my great surprise, he recommended that instead of a half-time appointment in German, I take a 1/4-time in German and another 1/4-time as research assistant to a professor in the Department of Spanish, Italian, and Portuguese, whom I had indeed heard of, but knew very little about. My first reaction was 'No'. Why would I want to work for someone in Romance languages? Professor Banta patiently explained to me the possible advantages to a student interested in linguistics of working for Professor Kahane. I accepted reluctantly, thinking of the valuable teaching experience I would be missing.

In my interview with Professor Kahane, I immediately discovered a kind person who needed an assistant with a knowledge of German, since he and his wife and collaborator, Dr. Renée Kahane, were engaged in research seeking the source of the term *grail*, so prominent in medieval literature, and also the identity of the figure of Kyôt, mentioned by Wolfram von Eschenbach as the source of his *Parzival*. That year turned out to be a fascinating experience for me, working in the Kahanes' office, then in the rear of the Modern Language Library. I saw first-hand how scholars go about the

business of conducting research and experienced the joy and excitement that comes from making new discoveries, from finding new links, from carefully selecting exactly the right turn-of-phrase, even from the meticulous proofreading of galleys and the careful checking of quotations and their sources. It was a different world from the one I was accustomed to, but also one in which I knew I could be at home.

As it happened, during the following summer the German Department was unable to provide me with financial aid, which was a severe blow to my wife and me, since Hannelore was expecting our first child in August. Somehow, the Kahanes learned of our predicament and took immediate action. Henry secured a research assistantship for Hannelore which would keep us both busy and financially above water for the summer. I am now convinced it was as much make-work as a pressing necessity for them to have us translate hundreds of little slips of paper containing words and phrases from the dialect of Kephalonia betraying Venetian influence on the Greek of that island. But for us, this work was also a hugely educational experience. Since Hannelore was a native speaker of German and I of English, we were able to cooperate in translating the German translations of these often earthy items into English. It was another view into the world of scholarship, at the time a little shocking, which is comprehensible now only in the context of the late 1950's, when *From Here to Eternity* had to be printed with asterisks in place of vowels in strategic places.

During that summer we also got to know and love Henry's mother, who came to our apartment every day for lunch while Henry and Renée took their children to Wisconsin for a week's vacation. Frau Kahane, then in her eighties, not only regaled us with delightful tales of her younger years in the heady intellectual atmosphere of Vienna and Berlin, she also showed Hannelore how to bathe a newborn infant and gave her a good deal of practical advice on childcare. We were flattered to learn from Henry after her death that she had considered us to be the last new friends she had made.

Henry's interest in us did not end when we left Urbana. He and Renée continued to take an interest in my career and in our well-being and had a substantial impact on both, for which Hannelore and I are both deeply grateful.

A few days after Henry's death, Professor William M. Calder III, the William Abbott Oldfather Professor of the Classics, wrote some words to me that I would like to share with you.

> I have just received your saddening note. I consider it a privilege to have known Henry R. Kahane. His life was a model for every decent scholar. He belonged to a vanishing species. He was an intellectual. Again and again I met him a nonagenarian at lectures in classics or German. His emeritude was the chance to work harder. Solon says wisely "Never call a man happy

until he has died." We can call Henry Kahane happy. He loved his work and lived for it. He made a permanent contribution to human knowledge. He gave generously to students and colleagues. He had a wonderful wife who was also his closest colleague. He lived to see two children successful. He had a famous brother who was a distinguished archaeologist. He was never bitter at the unfairness with which history treated him. He was ill for a few days. He died painlessly in his sleep. He is remembered as a friend by all who knew him.

Roberta Kahane Garner: Department of Sociology and Anthropology, DePaul University, Chicago, Illinois

Others may speak today of Henry as a warm, patient teacher and mentor, a scholar, a vigorous administrator, and a loving father ("familienmensch"). I would like to remember him as a magician and prankster, whose sense of fantasy, imagination and ironic wit constituted the core of his being.

Part One: Of masks and mirrors

Much of this playful side of Henry derived from his immersion as a youngster in the world of theater and his continuing love of the illusions of the stage. On many occasions he spoke of himself as "the old actor." Certainly many of my happiest moments with him centered on plays, and I remember very clearly the wonderful surprise on my fourth birthday when I received the Little Theater, a plywood construction with colored lights and velvet curtains for which my mother and I produced cardboard sets and characters suspended by wires, while my father and I invented exciting plays about pyramids and zeppelins. Henry and I also performed as actors for my mother and grandmother, using as our stage my grandmother's room behind the curtain that partitioned our small apartment on Coler Street; one of our best series of plays concerned the servant Ramona, shrouded in silence to hide her Indian identity from her masters. What excitement when Papa and Mama prepared a staging of Pirandello's "Man with a Flower in his Mouth" for the Spanish and Italian Department, and what a treat it was for me to go to U of I theater productions with them. Later Henry read to me many of the great works of the stage — Oedipus Rex, The Bacchae, Schiller's Robbers — that portrayed the monster or criminal as tragic hero and the gods as implacable arbiters of human fate.

In short, he keenly felt the illusoriness of social roles, the drama of history, the pleasures of shape-changing, and the peculiar interplay of the real interiors and the shimmering surfaces of life.

Part Two: Twoness and manyness.

Henry's lighthearted and playful sense of self also derived from his life story as a Jew in Europe — an outsider, an "Oriental", a wanderer — and as a European in America — an exile in Paradise,

condemned to live in the innocent Eden of a Big Ten college town. What to some might have been a double alienation, a twofold source of pain and bitterness, was to him a source of delight and mischief. He played with these twonesses in his personal life and work. The role of bilingualism and multiculturalism in his scholarly work is well known. One of his favorites was *The Krater and The Grail*, in which he and my mother found the origins of Arthurian ideals of the soul in the interplay of Greek and Egyptian culture in antiquity, their preservation in Byzantine and Islamic forms during the Dark Ages (whose Dark Ages, anyway?), and their repackaging, recycling and transmission into Western Europe by Jews and Moors. Those of you who have seen the illustrations for this book know that he quite literally put new pictures on Richard Wagner's Wall of Fame.

These ironies at the heart of "Western" culture appeared also in his personal life. In some ways he was very Central European; for instance, I never saw him sit, let alone lie, on a sofa, nor eat without a knife and fork; and he always prided himself on his "Prussian punctuality." But under his stiff, slightly formal suits he wore shirts of the softest, silkiest and most colorful fabrics, because in his own words he was "a Jewish prince," that is to say, sensuous as well as scholarly. He was also a feminist patriarch, an oxymoron I wish I had time to explain. He bequeathed these cultural complexities to his children, who grew up Jewish and Gentile, German and Mediterranean, Pagan and "People of the Book," European and American ...

I end this section with another memory of Henry's reading to me when I was a child: As for all educated Central Europeans of his generation, the world of classical antiquity — Greece and Rome — was a wellspring of intellectual life and he spoke of it constantly to me. But I suddenly realized a month after his death, that he had read only one account of Roman history to me: A book in German (I do not know the author) that told the story of the Punic Wars entirely from the viewpoint of African and Semitic Carthage. I now consider this to be one of his jokes, one that I understood only forty years after he played it on me.

Part Three: The word, the magnifying glass and the aleph.

The two things I removed most eagerly after his death from the office in the library were a mirror and a magnifying glass. To the mirror I have already alluded when I described his identity as an actor, playing life's roles. The magnifying glass stands for his close inspection of words, each word a microcosm of history. The word was like an aleph, that tiny magical object of Jewish mysticism that contains within itself the entire universe. For Henry and my mother, the tracing of word histories was not a work of dry, antiquarian pedantry, but the squeezing of history into a compressed form because each word contained within itself class struggle, the clash of

empires, the migration of tribes, voyages of exploration, warfare with cannons and Greek fire, love, laughter, pleasures...

To conclude: The ironic and imaginative qualities of Henry's character also grew out of his childhood in Berlin — the same milieu that produced the political Freudians, the Frankfurt school, Walter Benjamin, and Gershom Scholem; for him (as for many intellectuals nurtured in this milieu) the sophisticated and assimilated Jewish environment of European rationality rested on a "substratum" of older, half-forgotten traditions of enchantment that he tried to recapture in his writings on alchemy, his reading of secondary sources on the Jewish mystical tradition and his continuing interest in his own Sephardic, Judaeo-Spanish and Balkan heritage.

To this heritage must be added the fact that he saw himself as a man who had outwitted Death, Death having appeared to him in the form of the SS officer who interrogated him in Florence in 1938. He was well aware that he had escaped only with the help of friends — gentiles, including Italians and Germans, and foremost among them my mother; but in any case, to have escaped gave him a pride, optimism, and toughness, as well as a deep thankfulness to Fate for the next 54 years of life. Of course, at the end he did not escape Death a second time, but this time Death came in the gentler form of old age, and during his last night, he spoke of traveling to Genova and Athens, returning in thought to his beloved Mediterranean. We scattered his ashes in the prairie landscape, and I will never forget the golden rays of the afternoon sun touching the greenness of the corn plants and the cottonwoods that day, Nature shining with the magic of his presence.

Charles Kahane: Science Advisor, National Highway Traffic Safety Administration, Washington D.C.

Ordinary, everyday experiences can reveal a lot about a man's character. I would like to share two happy memories of my father.

When I was 12, we visited Catalonia. We stayed at a brand-new hotel, with a shiny new espresso machine. When my father saw it, he said, "Charlie, have you ever seen an espresso machine?" "No." "I'm going to order an espresso so you can watch how the machine works." I was fascinated by the complicated preparations, mechanical activities and hissing noises that went into producing a tiny cup of black coffee. "Would you also like an espresso?" "No thanks, but is there any chance the machine also makes hot chocolate?" "Please give the young man a hot chocolate!" I watched in even greater fascination as the waiter took a bottle of chocolate milk from the refrigerator, poured it into a cup, opened the steam valve on the espresso machine and played live steam on the chocolate milk until it became hot.

With my father, every encounter became a learning experience. He always made sure that learning was not rote memorization, but discovery and fun. Just as he never stopped teaching, he never stopped his own learning. Even in his last months, he was studying a variety of new areas, looking for ways to apply his research methods.

Those last months, when his body refused to cooperate with his spirit, are imprinted in all our memories. Some of you, perhaps, never met him till this year. We should try not to remember him only that way, but how strong he was just a few years ago.

When my father was 68 and I was 21, my parents and I spent a month hiking in the Pacific Northwest. One morning, in the North Cascades, my mother felt like staying at the lodge. There was an unmarked trail that led uphill from the lodge. "We don't know where the trail goes," we told her, "so we'll walk uphill for a couple of hours, if it goes that far, and come back for lunch." We started up the hill without any food or water. After two hours, the scenery was wonderful, but we hadn't reached any place in particular. "How often do we have the opportunity to walk a trail like this?" he said, "Who knows when will be the next time? Let's keep going and see where it takes us!"

After 4 hours, when we were about 4-5,000 feet above the lodge, we reached a promontory. To the north, the peaks stretched far into Canada. Below us, Ross Lake was covered by a layer of clouds and surrounded by evergreens. We both knew: this was our destination. A few minutes later it started to snow. We ran most of the way downhill.

The way my father played that morning is how he worked all his life. When he had a new idea — when his intuition told him he was on the right track — he would pursue the idea relentlessly until he revealed its true meaning and full implications. He inspired all of us.

Morton W. Weir: Chancellor, University of Illinois at Urbana-Champaign

In a way, it is easier to memorialize a giant than it is to remember someone of lesser accomplishments. There is so much more that one can say.

But in another way, it is more difficult, because when the person's contributions are so many and they are so important, it is possible to overlook even some that would be the crowning accomplishments of an ordinary intellect.

Henry Kahane was anything but an ordinary intellect. He and Renee formed the most remarkable scholarly team that I have ever known or heard about. For 65 years, they collaborated on books and

scholarly papers, literally changing the nature of what we know about cultural linguistics.

This remarkable record of scholarship is well known to you all, as is the fact that Renee and Henry began their careers here in 1941. Henry retired in 1971, and at the time of his death, Henry and Renee have served this campus and its students for more than 50 years.

You may not know about some other aspects of Henry's career, however. For example, he served for a short while as a foreign correspondent in Istanbul, writing for a leading Berlin daily. Of this experience, he was later to write: "... many events that my colleagues for other foreign newspapers took seriously (I remember as typical the arrival of a Zeppelin) meant little to me." He soon and wisely returned to the academic life he really loved.

He served for five years as Headmaster of a boarding school for refugee children in Florence, Italy.

In 1938, he spent a week in an Italian prison as a kind of political hostage. Referring to that experience in an interview a few years ago, Henry said: "A week in prison, I must confess, is quite an educational experience. Every morning I was shaved, with tender care, by a lifer who had murdered his entire family."

Henry was instrumental in the formation of the Department of Linguistics on this campus. He and colleagues from a number of fields could see that such a department would promote the study of linguistics, but it took them eighteen years before the Department was successfully launched in 1965.

You may not realize, either, that after his retirement in 1971 he served as acting administrator of seven different units on this campus — four departments, one division, one program, and the Center for Advanced Study.

He was, in effect, our administrative pinch-hitter. In his quiet, intelligent, perceptive way he led these units effectively — some of which were in turmoil when he was asked to preside over them.

Henry was widely recognized and honored. He was the recipient of two Guggenheim Fellowships. He was named Outstanding Educator in America in 1974. He and Renee were the recipients of the Silver Award of the Academy of Athens in 1976.

Henry was awarded honorary degrees from Humboldt University in Berlin, the Free University of Berlin, and the University of Illinois.

He was elected to the American Academy of Arts and Sciences in 1989, a marvelous and well-deserved honor. He also served as President of the Linguistics Society of America. And of course, he was a member of our Center for Advanced Study.

Whenever I spoke with Henry, he never talked about linguistics — he probably knew that was hopeless insofar as I was concerned. We always talked about the library. And he always told me we weren't allocating enough money to it. Recently he wrote:

> The extraordinary library of the University of Illinois, in which we had our 'study' since the day of our arrival, proved to be an unending source of support.

Henry Kahane was amazing and productive right up until the end. Just the other night I was at a dinner and the conversation turned to Henry. One faculty member with whom I was speaking said that she had run across Henry in an elevator just a couple of weeks before his death. He asked her what she was working on and when she told him he said she should take a look at some relevant work written nearly 50 years ago — and he later returned to his office and sent her the specific reference.

I end with that story because it is the essence of Henry and the essence of scholarship. A giant has indeed passed from our midst. He cannot be replaced.

Larry R. Faulkner: Dean, College of Liberal Arts and Sciences, University of Illinois at Urbana-Champaign

In Illinois, in this city, on this campus, I have learned the value of genius and of commitment.

It is not now fashionable to speak of genius, but it does exist, and it is of immeasurable importance to a university. I have encountered here members with extraordinary intellectual power, far beyond that of merely talented colleagues. Genius allows achievement and advance that diligence, no matter how great, never will. There is no substitute for its enriching power.

On this prairie, with nothing in the physical landscape to distinguish this location from countless others, has developed one of the truly exquisite locales on the globe. It has gained its merit entirely from its humanity; its distinction arises from the genius and commitment that have marked its principal figures in the 20th century. Henry Kahane was a giant here. He gathered vast ranges of the humanities into his intellect, and he invented. He saw new ways of organizing thought and scholarship, and he led. Over and over again, he led. I am sure that he was head of more departments and programs than any other individual in the history of our campus.

Chancellor Weir has already mentioned the long, persistent effort leading to the birth of the Department of Linguistics. Henry Kahane took pleasure in telling me that story not so long ago. I recall the brilliant sparkle in his eyes when he explained how he finally wore down the Dean!

Years ago, long before I learned of the magnitude of their accomplishments, I came to recognize a remarkable symbol of personal commitment in the brisk walk together of Henry and Renee Kahane. Almost every day — in the morning, at noon, and in the evening — they passed by Roger Adams Laboratory on their way to or from the Library. One did not need to know the details of their work to see that purpose filled their lives.

Chemistry is my field, so it is perhaps not surprising that I draw on a chemical vision. Among the most beautiful and useful of all physical phenomena is crystallization. A striking effect can arise if one introduces a single tiny crystal, as a seed, into a solution of molecules at saturation. One by one, new molecules seat themselves on the faces of the seed, so that it grows to become a different entity, often manyfold larger than the original. The seed organizes the surrounding universe to match its own elegant patterns. Henry Kahane was a seed crystal in this community, and a large, beautiful product has arisen from his facets.

In Illinois, in this city, on this campus, I have learned the value of genius and of commitment.

Ladislav Zgusta: Director, Center for Advanced Study, Professor of Linguistics and the Classics, University of Illinois at Urbana-Champaign

Chancellor Weir has mentioned that Henry Kahane was involved in the work of many institutions, departments, societies. Of particular importance was his membership in the Center for Advanced Study of our University. He was one of the first professors appointed to that highest academic position on the campus at the very beginning, when the Center was founded, and for some time he was the Director of the Center. In this way, Henry's participation was of decisive importance in the molding of the new institution and in the determination of the direction which its development was to take. Even when emerited, Henry frequently came to our gatherings to hear a presentation, or to take lunch with the Center community. He was as excellent a companion as he was a penetrating discussant. The Center regrets the passing away of one of its most eminent members.

One of the national organizations in which Henry played an important role was the Linguistic Society of America, by the number of its members probably the greatest professional society of linguists in the world. Henry was the Society's president and member of many committees. I cannot fail to mention that it is not only the executive officers of the Society who asked me to bring their condolences to this memorial gathering: I received a phone call from the Secretary asking me also to mention how deeply saddened the whole staff of the Secretariat's office is and what a fond memory they all have of Henry's kindness and pleasant way of reaching decisions when he was President of the Society. It seems to me that to be remembered

in such a warm way is typical for Henry's ways of dealing with people.

I frequently asked myself how one can become such a repository of human knowledge and wisdom as Henry was and it seemed to me that the answer was in the many dimensions of Henry's life. The first of those dimensions is obvious: his trajectory through time was longer than that of most people, and all those nearly ninety years were marked by constant growth and constant increase of knowledge. The second dimension, the so to say horizontal dimension of space, is not less important: Henry lived in Germany, Italy, Greece, and America. This sounds like not a big deal in today's world of easy travel, but the point is that this was not travelling around, those were changes of places where to live. There is an enormous difference between travelling somewhere and moving there for life. As anybody who went through the experience knows, the latter is infinitely more difficult and requires deep, extensive adjustments in the way how one understands and handles people and situations. A 'normal' emigré becomes an immigrant once in life: Henry went through that process three times. It must have been very difficult, but as a source of experience priceless. The third dimension of Henry's life is that of his research. Romance linguistics and philology is one of the richest fields within the Humanities, because of the number of languages, their long and well attested history and their rich social and spatial ramifications, and because of the wealth and importance of the texts preserved in all those languages. As if this were not enough, Henry combined with this overwhelming bulk of study an intensive research in the Byzantine culture. Greek is one of the few languages of the world that have an attested history stretching over several millenia. The European tradition has been that of studying in the first line Ancient Greece and its language; it was only quite recently that a modest interest in Modern Greece was developed. This caused that the Byzantine culture has not been studied with the intensity its importance would deserve. Henry's field of research comprised both these enormous areas, Romance and Byzantine; one of them would be more than enough for a lifetime, but Henry roamed through both those vast intellectual spaces, constantly accompanied by his *pótnia álochos*, an accomplished scholar herself, with the virtuosity of the master who knows where to find new treasures and who is not afraid to tread on untrodden paths. This *par nobile maritorum* (if we accept the changed quotation) developed an ability of combining knowledge from the two fields, Romance and Byzantine, that will seek its equal for generations to come.

However, there was yet another dimension in Henry's intellectual life. During one of the, alas, last lunches I had with him, we talked about Modernism and its origin; Marcel Déchamp and his memorable painting submitted to the Salon were, naturally, mentioned, but also the quotation from, I think, Rimbaud in which

we are told that 'it is absolutely necessary always to be as modern as possible'. It was most interesting to see that the nearly nonagenarian had a much more positive attitude to this piece of wisdom than I, although nearly a quarter of a century younger. That was typical Henry: always accepting something new. I think that this component of his psychology, the proclivity to things new, was the reason why he as a young man hesitated whether to choose journalism or Academia as his career. To make up his mind, he spent a year as reporter of a big German newspaper in Istanbul; but luckily for all of us, the Muses won. Henry's whole life was marked by symptoms of this proclivity, of this willingness to accept novelty. For decades, he has never taken a plane, whether crossing the Atlantic or the American continent. But then, when he was elected President of the Linguistic Society in his, I think, eighties (unless they were 'only' his late seventies), he had to get somewhere in California quickly and the only possibility how to make it was offered by the plane: without hesitation he took it and happily kept flying forever after, always accompanied, of course, by his *alter* (or in this case, *altera*) *ego*. There was a saying in Rome about Cato, a man who for a long time hated Greek culture: *Cato senex litteras Graecas didicit* "Cato learned Greek when [= in spite of being] an old man"; with equal right we can proudly say *Kahane senex caelum navigare didicit*. I am sure that this attide, this willingness to accept novelty, this constant orientation towards modern trends, points of view, ways of life, has caused that Henry during all his nearly ninety years of life always has been so very young.

Braj. B. Kachru: Professor of Linguistics, Jublee Professor of Liberal Arts and Sciences, University of Illinois at Urbana-Champaign

I first met Henry and you, Renée, on October 17, 1963, in a cluttered room behind the present reference room of the Modern Languages and Linguistics Library. That was almost a generation ago. And now, this afternoon, I am here to celebrate with you, Renée, Roberta, Charles, and the friends, students, colleagues and admirers of Henry, the many ways in which the richness of Henry's life touched us all. In the tributes paid to Henry this afternoon we have seen many facets of his personality: his wit and the twinkle shown in his penetrating eyes, his capacity for immense friendship and concern, his contagious dynamism and energy, his astute instinct for academic administration, his integrity and equanimity, and , above all, refinement and dedication. In short, he was an ideal humanist, a renaissance man.

But that was only one part of Henry's personality. After all, Henry was an institution in more senses than one. The other aspect perhaps less often articulated and less visible, was Henry the rebel, the activist, and the catalyst for challenge and change. In fact, Henry

in his quiet way was indifferent to conventions, ignored dominant disciplinary paradigms, and ignored academic and administrative norms. He had an extraordinary skill in building bridges between the present and the challenging future. In 1962, he strongly supported the appointment of Robert B. Lees to lead the yet-unborn department of Linguistics at UIUC, for he wanted the future department to be on the cutting edge of the fast-expanding discipline. And Lees was an apostle of a new paradigm: provocative, unconventional and often devastating. Henry ignored all that , for he saw the future direction of the field. And this showed his academic vision and foresight.

His persistence in achieving an objective — academic or administrative — is legendary on this campus. Once, when asked how he had been able to convince the administration to start linguistics at the University of Illinois, he answered with typical Kahane wit: "It was very simple. It took just two things. One, I had to wait until we got a Dean who was not from the Humanities, because a humanist Dean invariably shelved the proposal for a linguistics department. We had to wait until a psychologist became the Dean. Second, I made it a point to visit the Dean every week to emphasize the importance of linguistics on this campus. He would throw me out the door and I would come back through the window." This persistence for an intellectual cause and for change, and an immense intellectual curiosity were marks of Henry the activist.

But there was a contradiction, too. Henry was progressive in ideas, in thinking, in teaching, but he did not quite accept the material progress of our times. In 1973, Henry responded firmly to an interviewer: "I don't drive. I don't fly. I don't use a typewriter and I never look at television. I am a European, and I am very afraid of machines." (*Illinois Alumni News*, February 1973:14) This he said in his charming, consciously preserved, European accent. However, when Henry was elected President of the Linguistic Society of America in the 1980s, the position entailed considerable travelling. He was persuaded to travel by air. And once Henry and Renée had found their wings, it was difficult to stop them.

This blend of modernism and tradition, combined with an exuberant and youthful spirit, made the Kahanes unique. And those of us who set our watches according to the schedule of the Kahanes will understand what I mean. In a sense their life revolved around room 427 in the Library Building. In their life style, the Kahanes provided "... a unique, enviable example of the perfect reconcilability, for both husband and wife, between a rich and balanced family life and the rigor and austerity of advanced research." (*ibid*: p.14) Who contributed what to their long academic career of joint research is difficult to answer. Once, confronted with this question, Henry's modest answer was, "my wife has the ideas and I write them." And, as one would expect, Renée protested, "I think that is not right." Henry clarified: "teamwork is a very complicated thing. As ideas

develop, one gives one thing and then the other changes it, and then the first one again." (*ibid*: p.14) This was actually the secret of their very harmonious relationship.

In celebrating Henry's life, then, we are here to celebrate a life of unusual dedication and a life of deep scholarship, but above all, a life of warmth and human concern. We are celebrating the life of one who built programs, brick by brick, and person by person, and created well-rounded students idea by idea and argument by argument. Henry's international impact and the respect for him as a person was evident at the International Conference on World Englishes Today (April 1-4, 1992), organized to honor him on his 90th birthday, seven months before his actual birthday. And in his talk at the Conference, he did not talk of the past, but presented an agenda for the future.

I was fortunate in that I had many opportunities to watch closely as Henry performed his roles in the classroom, in the library, as an editor, as a collaborator and as a mentor. I almost said as a guru, but he did not like that term. We had telephone chats at least once a week. On Thursday, one day before Henry passed away, he was optimistically talking, in his usual sanguine and firm tone, of his future plans, of one-hundred-and-one projects. We even briefly talked of a volume which we were jointly editing to be released in 1994 to honor one of our mutual friends.

The next day, Friday, at 7:30 p.m., Renée called Yamuna to convey the grim news. And two hours later, when Henry was taken from 808 W. Oregon, the five of us, Renée Kahane, Mariam Ahmed, Yamuna Kachru, Amita Kachru, and myself, who were there to say goodbye to him represented the world's great cultural traditions: the Judeo-Christian, the Hindu, and the Islamic. It was not planned, it just happened that way: a convergence of major faiths and philosophies of life and living. I believed that Henry would have liked it that way, for in his ideas, he did not believe in the boundaries of culture and region. All his life he crisscrossed those boundaries in his scholarship and in his personal life. As the hearse turned off Oregon Street on to Lincoln toward Florida, it was almost dark; the black hearse disappeared, carrying one who has been called a prince among teachers and a scholar's scholar, and most importantly, a dear colleague to us all. An era seemed to end as one wistfully watched the slow-moving hearse. We walked back to Henry's living room, misty-eyed. And there was Renée with us, dignified, serene, and even at that moment of loss, concerned about the comfort of us four.

And on that evening, as Renée and the four of us sat in their living room, I wondered: has this relationship of years with Henry come to an end? But, soon I thought of the assurance given by the wise, the sages, that the physical body may be destroyed, but the Self can neither be cut, nor burnt, nor be wet or withered, for it is

eternal, all-pervading, stable, immovable, and timeless. Therefore, knowing this to be so, one should not grieve, says the *Song Celestial, The Bhagwad-Gita.*

PART III

Graduate Student Research 1964-1992

Introduction

This part includes abstracts of 191 Ph.D. dissertations and 52 Master's theses submitted to the department from 1964 through the end of the 1991-1992 academic year. These abstracts do not include dissertations or theses submitted to other academic units at UIUC on topics related to linguistics, for example, Department of Spanish, Italian and Portuguese; Department of Germanic Languages and Literatures; Department of the Classics; Department of East Asian Languages and Cultures; interdisciplinary program in Second Language Acquisition and Teacher Education (SLATE); Division of English as an International Language; and various units in the College of Education. A number of dissertations and theses submitted to these units are directed by the faculty of our department, or they serve as members of the committees.

Research in Progress lists the dissertations and theses defended and/or deposited to the Graduate College after August 1992 and also those which have yet to be defended for award of the degree.

We have also attempted to make this section user-friendly by including the following indices:

1. Author index
2. Language index
3. Regional index
4. Areas of concentration; and
5. Index of advisors

We hope that this part will be useful to researchers in linguistics and to our present and future students.

Ph.D. Dissertation Abstracts

[1] Abasheikh, Mohammad Imam 1978
Advisor: Charles W. Kisseberth

The grammar of Chimwi:ni causatives

In this dissertation we have attempted to provide a detailed introduction to the morphological causative verbs in Chimwi:ni, an introduction that has included phonological, morphological, morphophonemic, syntactic, and semantic aspects. We have shown that the causative is derived either by means of suffixation or consonant change and that the causative stem may function either as simply a transitive verb or a true causative (with varying semantic implications — e.g. assistance, compulsion, persuasion, provision of means). Some evidence has been presented to show that the true causatives are appropriately described in terms of a bisentential source whereas those causatives with just a transitive function ought not be analyzed in the same way. We have examined a variety of syntactic features of sentences containing a morphological causative verb. In particular, we have considered the grammatical verb and how these NP's behave with respect to various transformational processes in the language.

The emphasis of this dissertation has been on providing a description of the behavior of Chimwi:ni causative verbs. But in order to present this description, in a coherent fashion, it has been necessary to suggest various rules (Predicate Raising, Preposition Incorporation, principle for assigning grammatical relations, etc.) and rule interactions (Reflexivization before Predicate Raising, Predicate Raising before Preposition Incorporation, etc.) It should be noted, however, that we have made no attempt to present a formal account of these rules or their interactions. Rather we have tried to give some data justifying these rules and interactions, leaving the details and the formalism for future research.

We hope that the basic facts about Chimwi:ni causatives presented in this dissertation can — in conjunction with similar descriptions of other Bantu languages — provide insight into the structure of the causative verb in Bantu, and that such insight into Bantu causatives will provide relevant material for a general theory of causative verbs in human languages.

[2] Abdo, Daud A. 1969
Advisor: Robert B. Lees

On stress and Arabic phonology: A generative approach

Arabic dialects spoken in the Arab countries from Morocco in the west to Iraq in the east and from Syria in the north to the Arabian Peninsula in the south differ from each other, even within the same country, in various respects, particularly in phonological features and lexicon. Most of these dialects, however, share certain features that are different from Classical Arabic (Cl. Ar.) and Modern Standard Arabic (MSA), the latter being the form of Arabic that is taught in schools throughout the Arab countries and is used as the medium of press, formal talks, and the greatest number of radio broadcasts.

This thesis is opposed by others, e.g. Blau (1965) who maintains that "the various items, carefully collected by Ferguson to attest to the existence of the 'koine', from which, it is alleged, the modern sedentary dialects have

developed, do not in our opinion, prove that such a common language really existed. The 'koine' stands, as we have tried to demonstrate, at the end of the linguistic process and not at its beginning." Blau attributes the features the spoken dialects share in contrast to Cl. Ar. to a general "drift", or "convergent lines of development", and to mutual influences. Blau's thesis is that the Arab conquests during the seventh century A.D. affected their language through contact with the languages of other peoples "which had lost their flexional systems."

It is not the aim of this study to deal with this problem of the origin of modern Arab dialects. Suffice it to say that the differences between these dialects and Cl. Ar. should not be exaggerated, except perhaps in the realm of the lexicon. In phonology, where the differences are most obvious, excluding lexicon, it is striking that in most cases the underlying structures for the spoken dialects dealt with in this study and Cl. Ar. are by and large very similar, and almost identical. The phonetic differences are accountable by plausable rules, as will be seen in this study.

Although this study concentrates mainly on an Arabic dialect spoken at Jabal Al-Mukabbir south of Jerusalem, the discussion of stress and some related matters will not be restricted to this dialect, but will also touch on other dialects, particularly Egyptian Arabic (Cairo) and Iraqi Arabic (Baghdad), in addition to Cl. Ar., since similar problems are involved in most Arabic dialects, and I simply chose the ones I am most familiar with (ignoring other dialects from the Levant because they are similar to Palestinian Arabic).

[3] Abdul-Karim, Kamal Wadih 1980
Advisor: Micheal Kenstowicz

Aspects of the phonology of Lebanese Arabic

Many studies relating to the sound system of Lebanese Arabic (LA) often times included in works on Syrian and Levantine Arabic, have been conducted within the traditional framework of Descriptive and Structural Linguistics. This study is the first major work on the phonological system of LA conducted in the framework of Generative Phonology.

Lebanese Arabic differs from other colloquial dialects in several interesting ways. One is the major subdivision of the Lebanese dialects into differential versus nondifferential dialects. The latter limit vowel syncope to short high unaccented vowels in open syllables, while the former have generalized the rule to *a* and thus apply it to all short vowels regardless of quality. This generalization of the syncope rule provides important confirming evidence for the cyclic analysis of stress assignment originally proposed by Michael Brame for Palestinian and Maltese Arabic. Traditional research in Levantine Arabic was puzzled by the contrast between *fhim-na* 'we understood' versus *fihim-na* 'he understood us', both deriving from [*fihim-na*]. Brame accounted for this contrast by proposing a cyclic assignment of stress to the underlying representations [*fihim-na*] versus [*figim*]-*na*]. In this dissertation confirming evidence for the cyclic analysis is demonstrated on the basis of the nondifferential dialects, where [CaCaC] perfects exhibit the same contrast: *drab-na* 'we hit' versus *darab-na* 'he hit us'. We also show that the possessive suffixes induce a cyclic structure on nouns: cf. *samak-na* 'our fish'.

Two different analyses for the differential versus nondifferential contrast are discussed. One simply deletes *a* in the context CV, while the second reduces *a* to *i* in unstressed nonfinal syllables and then syncopates the resultant *i* in an open syllable. Further research is needed to decide between the two alternatives.

In the course of our analysis all of the major phonological alternations appearing in the inflection of the nouns and the various verb forms — perfect, imperfect, imperative, lame — are discussed.

[4] Abu-Salim, Issam M. 1982
Advisor: Michael Kenstowicz

A reanalysis of some aspects of Arabic phonology: A metrical approach

This study attempts to reanalyze some aspects of Arabic phonology, particularly, Palestinian Arabic (PA), within the metrical framework. First, the syllable structure and syllabification rules of PA are dealt with in Chapter 2 where it is argued that the syllabification process involves not only rules to define syllable boundaries and assign structure to syllables, but also other rules, which have to apply at the time syllabification is carried out. The placement of such rules among the syllabification rules explains a number of phenomena, such as shortening of vowels carrying primary stress, that can not be accounted for by the phonological rules proper. Moreover, the internal structure of the syllable is examined and it is concluded that McCarthy's (1979a,b) analysis of superheavy syllables is inadequate.

Second, the question of how syllables are organized into higher metrical units is considered in Chapter 3. This issue is directedly related throughout this chapter to stress assignment in PA, where it is argued that the metrical approach to stress (prominence) is superior. Moreover, the metrical foot is argued to be maximally ternary rather than unbounded in PA.

Third, vowel-length alternation is dealt with in Chapter 4. Broselow's (1976) account of this phenomenon in Egyptian Arabic, whereby vowels are lengthened before clitics, is discussed and shown to be inadequate. An alternative analysis is then offered whereby this phenomenon is accounted for by a vowel-shortening rule. This rule is shown to be simpler if stated in metrical, rather than segmental, terms. Moreover, the stressed-vowel shortening phenomenon is considered and a proposal is made to account for their shortening by a syllabification rule applied at the time syllable and higher metrical structures are assigned.

Finally, in Chapter 5, various syncope and epenthesis rules are considered in an attempt to show how these rules modify metrical structures. It is argued that these rules do not alter the underlying prominence relations established by the metrical-structure assignment mechanism since they apply after the metrical structure is erected.

[5] Ahn, Sang-Cheol 1985
Advisor: Chin-Wu Kim

The interplay of phonology and morphology in Korean

The purpose of this study is to propose a more satisfactory explanation for the various morphologically constrained phonological phenomena in Korean.

For this, I employ the framework of lexical phonology by Kiparsky (1982) and Mohanan (1982) and CV phonology by Clements & Keyser (1983).

Chapter 1 provides preliminary information about an inventory of underlying segments, as well as an overview of lexical phonology and CV phonology.

In Chapter 2, I examine the word-formation process in Korean and organize the model of the lexicon which consists of four ordered strata. I also provide a reanalysis of the three noun-forming suffixes, *-i*, *-im*, and *-ki* which is related to the Avoid Synonymy Principle of Kiparsky (1983). Finally, I reanalyze the Korean syllabification process.

In Chapter 3, I discuss several consonant-related problems. First, I argue that the controversial tensification phenomena should be regarded as several different processes. For the so-called "Bindung-s" phenomenon, I propose the underspecified *c*-epenthesis rule instead of the traditional *t*- and *n*-epentheses. Second, I discuss two types of palatalization phenomena in Korean; lexical *t*-palatalization and post-lexical palatalization processes. I also argue that phonological opacity is explained by correct morphological analysis. Third, I reanalyze the "so-called" irregular conjugation of the *p*-, *t*-, *s*-, *h*-, and *l*- predicates within the framework of CV theory. Finally, I discuss the miscellaneous aspects of aspiration, consonant cluster simplification, and coda-obstruent neutralization.

Chapter 4 deals with several vowel-related problems. First, I discuss the vowel harmony process and the reduplication in which I propose to recognize two kinds of vowel harmony in Korean, each dividing the vowel chart in its own way and being differentiated from each other in terms of the lexicality vs. post-lexicality distinction. Second, I reanalyze the i-deletion phenomena and recategorize them into two groups; lexical vs. post-lexical. I also discuss the i-analogy phenomenon which occurs in the process of children's overgeneralization of suffixation. Finally, I elaborate on the vowel shortening process.

In Chapter 5, I review the thesis and discuss some of the implications.

[6] Ajolore, Olusola 1974
Advisor: Howard Maclay

Learning to use Yoruba focus sentences in a multilingual setting

Focus sentences are so important in Yoruba that it is hard to picture what the language would be like without them. Their arrival in a child's language development thus marks an important point in his linguistic development.

This dissertation, based on data from adult Yoruba and child language, tries to do two things. It tries to present an adequate analysis of adult Yoruba focus sentences, and to account for how Taye and Kein (the two children studied) came to learn to use these sentence types. These two tasks are not easy to perform, and so not commonly found in language learning accounts.

After describing the children, their socio-linguistic background, and the data, the dissertation defines focus sentences, and links them with identical linguistic phenomena in English. In showing some of the characteristics of this sentence type, an attempt is made to show that one type of negation in the language is possible if and only if there is a focus sentence construction. The study shows that one form of reflexivization in the language (and incidentally

in English) does not require the clause-mate condition, but that it occurs to prevent a syntactic gap.

A proposal for analyzing focus sentences reveals that:

Ore ni o ra isu
Ore be he bought yams
'it was Ore who bought yams'

transformationally derives from

Ore ni eni ti o ra isu
Ore be one who he bought yams
'Ore was the one who bought yams'

which in turn derives from

eni ti o ra isu ne ore
one who he bought yams be Ore
'the one who bought yams was Ore'

It reveals that there is no known way of transformationally deriving focus sentences of the type just seen from their traditionally related non-focus sentence:

Ore ra isu
Ore he bought yams
'Ore bought yams'

and that an attempt at deriving them differently than as sketched in this study will leave many grammatical focus sentences unexplained and so must be judged observationally inadequate, or do so only at the cost of a very complex machinery the type not really called for.

It argues that the Extraction Theory proposed by Grosu (1972) and Akmajian (1970) for analyzing English pseudo-cleft sentences, the English counterparts of Yoruba focus sentences, cannot handle the Yoruba data, and that in fact it cannot cope with what it is intended to do. I show that my proposal can handle English focus sentences adequately, including the ones which all existing analyses have no answers for.

The second part examines the language learning data, and reveals that the rules by which adult focus sentences are derived do not help to explain how Taye and Kein learned these sentences. On the contrary, there is reason to believe that they learned by imitation, and pattern copying, and by careful use of semantic cues. The gap between the linguistic description and the language learning data is shown to be inherent in generative grammars which say that they have nothing to offer concerning how language is perceived and produced.

Taye and Kein are shown to have learned certain oppositions very early in life and these are used to project how they probably learned language. Semantic notions like animacy, humanness, dependency, agent, initiator, affected, action or attribution, possessor-possessed, and location or direction of objects and people are suggested as cues which the child uses in learning to speak. The dissertation suggests that an adequate theory of child language will have to integrate all of these with the use of imitation in its wide and true sense with the use of imitation in its wide and true sense, and the place of the model. This it argues, means that biologists, neurologists, speech experts,

linguists, sociologists and psychologists must have to team together to produce such a theory.

[7] **Alghozo, Mohammad Hamdan** 1987
Advisor: Michael Kenstowicz

Syncope and epenthesis in Levantine Arabic: A nonlinear approach

The nonconcatenative morphology of Arabic played a prominent role in the development of CV phonology. McCarthy (1979, 1981) showed that many Arabic word formation rules can be conceived of as stipulating a CV template to which the segmental phonemes are autosegmentally mapped. In addition, he showed that the Semitic root pattern system can be reduced to the assumption that radical consonants and vowels are on separated tiers representing different morphemes. The development of underspecification theory (Archangeli 1984) made it possible for the radical consonants and the vowels to be minimally specified in the lexicon, and for the phonological rules to apply and refer to tiers rather than the whole representations. In this study, we argue that the above assumptions are essential: first, to explain an otherwise problematic set of alternations found in some Modern Levantine Arabic dialects; and second, to provide an explanation for the effects of emphatic consonants on other neighboring segments in various Arabic dialects.

The assumptions made in this study are: (1) The syncope rule deletes a mere V slot from the skeletal tier and the vowel associated with it remains floating. (2) Epenthesis rules insert an empty slot which will be (a) associated with a floating vowel if available; (b) otherwise, associated with a high stem vowel; (c) otherwise, associated with an empty matrix. Redundancy rules of different types will fill in the values of the front vowel *i* in the empty matrix. (3) The interaction between redundancy and phonological rules will provide the desired epenthetic vowel *u* in emphatic contexts and prevent the same vowel in the same contexts from getting rounded when (a) syncope feeds epenthesis within a stem or (b) the stem vowel is the high front *i*. Evidence and arguments for assumptions (1) and (2) are presented in Chapter 3, and those for assumption (3) are presented in Chapter 4. Chapter 1 serves as an introduction to the study, and Chapter 2 briefly discusses syncope and epenthesis rules.

[8] **Awoyale, James Oladuntoye Yiwola** 1974
Advisor: Herbert Stahlke

Studies in the syntax and semantics of Yoruba nominalizations

This study is an attempt to characterize Yoruba nominalizations, and on that basis to enrich our understanding of the processes that a natural language can use to create new lexical items that are too large to be found in any dictionary. This investigation is imperative for several reasons. First, the processes have not been characterized in the language before, in the way we have done here, at least not to our knowledge. This does not mean that nominalizations are not important in Yoruba. In actual fact, it is our contention that the same information that speakers use in forming sentences is used in creating new words out of existing forms in the language. The creativity that makes somebody know and use the infinite number of sentences of a natural language, underlies the production and use of compound forms in the language.

Our success in describing this knowledge will depend first on substantive evidence from individual languages and what it provides for explaining language as a form of communication. Such substantive evidence will include the morphology of the language, which will tell us how new words are derived and how productive the processes are. We might then begin to understand why a speaker can tell whether a new word belongs to his language or not, just as he can tell whether a sentence is part of his language or not.

The information we have on Yoruba indicates that it is possible to dissect its complex lexical items formally, without doing it intuitively alone. That is, it is possible, given a nominal compound, to pull apart both the affix and the stem. This is our approach in this dissertation. Both the stems that the affixes take, and the affixes that the stems take are looked at in detail in order to determine what principles govern their association. What previous writers on Yoruba have done is to list the affixes and the nouns they can form. The nominal compounds were not related to sentences in the language, nor were the stems correctly identified as to whether they are verbal or ideophonic.

[9] Bader, Yousef Farhan 1984
Advisor: Michael Kenstowicz

Kabyle Berber phonology and morphology: Outstanding issues

This thesis presents a novel account of the most important phonological and morphological processes operating in a Berber language — Kabyle — spoken in parts of Algeria. The study is conducted within the framework of the recent theories of syllable structure (with emphasis on the CV and Onset and Rime tiers), autosegmental phonology, and lexical phonology and morphology.

First, the syllable structure of Kabyle is investigated. This language will be seen to have a relatively simple syllable structure, compatible with universal rules. Then, I show that the puzzling problem of the schwa in Kabyle and another Berber dialect can be easily accounted for if a set of syllable-building rules specific to these languages is devised. The syllabification scheme will also be demonstrated to explain the phonological alternations associated with the 'bound' state of the Kabyle noun as well as with some vowel sandhi phenomena. In addition, the problem of syllabification at the word and/or the phrase level and its implications for the linguistic theory will be discussed. Finally, in the domain of phonology, I will show that the distinction made within lexical phonology between lexical and post-lexical rules is able to account for some consonant sandhi phenomena.

In the realm of verbal morphology, two attempts are made. First, the model of autosegmental analysis which allows reference to levels of representation or tiers other than the surface segmental representation of a string (McCarthy, 1979) is made use of in order to explain the Kabyle verbal allomorphy. Second, I attempt to account for the same verbal allomorphs within the framework of Lieber (1980) who argues that the morphological alternations (allomorphs) of a verb must be listed in the lexicon, with relationships among them expressed by means of devices called morpholexical rules. Each analysis will be shown to bear at least one important consequence for the purpose of understanding Kabyle verbal roots and their derivatives.

[10] Barjasteh, Darab 1983
Advisor: Yamuna Kachru

Morphology, syntax, and semantics of Persian compound verbs: A lexicalist approach

This dissertation deals with morphology, syntax and semantics of Persian compound verbs from a lexicalist viewpoint. The following is a summary of the major points discussed in this study.

In Chapter 1, I show that the morphological, syntactic and semantic properties of Persian compound verbs have not received proper treatment in the past. To this end, I take the position that an adequate analysis of this phenomenon is possible within the general perspective of the "Lexicalist Hypothesis."

In Chapter 2, I discuss the phonological, morphological and syntactic characteristics of Persian simple verbs. Unlike previous proposals, I suggest that all Persian verbal stems are registered in the lexicon. However, prior to being mapped onto the underlying P-markers, I argue that such stems undergo a number of lexical rules.

In Chapter 3, a distinction is made between gerundive nominals and derived nominals. It is shown that while the former category are derived syntactically, the latter are constructed in the lexicon. Such a distinction is argued to provide an explanation for a regular tendency in all Persian gerundive nominals which do not undergo compound verb formation processes.

In Chapter 4, two major categories of simple and compound derived nominals are examined. It is argued that while a syntactic analysis of these nominals has a number of shortcomings, a lexical approach to the problem is fairly adequate.

In Chapter 5, the phenomenon of verbal compounding is discussed. Based on a number of criteria, it is argued that a large portion of Persian compound verbs are separable by various syntactic transformations. In this chapter, it is also argued that, first, the process of compound verb formation, similar to the case of derived nominals is lexical; second, unlike previous claims, such processes reveal a remarkable pattern of regularity.

[11] Barkai, Malachi 1972
Advisor: Robert B. Lees

Problems in the phonology of Israeli Hebrew

This dissertation covers the principal part of modern Hebrew phonology. The introductory chapter sets out the morphological "background" for the rest of the work, with a fairly complete outline of the Hebrew verb and noun.

Two main problems in Hebrew phonology are the a) "gutterals" and b) spirantization. In the former case, it is shown that there is a lowering of front vowels in the environment of a guttural, provided these vowels are either in a prefix or epenthesized, but vowel lowering does not affect (non-prefix) base vowels. It is claimed that prefixed and epenthesized vowels carry tertiary stress (as opposed to other vowels which are primarily or secondarily stressed), and that an output condition assigns tertiary stress to epenthesized vowels.

The question is also broached as to whether there is justification for setting up two pharyngeal continuants /'/ and /H/ both of which are absolutely neutralized; the former as a glottal stop, the latter as a voiceless velar fricative. Evidence is brought, inter alia, from children's speech to support arguments against a /'/ phoneme, and a 'concrete' approach is adopted, i.e. historical /'/ has been replaced synchronically by /ʔ/ plus certain exception features. Historically, some rules are applied to /'/ but not to /ʔ/. Arguments, based on children's interpretation of adult grammars, are presented to show how these exception features should be distributed in the adult's lexicon.

An underlying /H/ is however, shown to be justified, although it is absolutely neutralized as x. One important difference between the "recognition" of /H/ but not /'/ is that the former is realized phonetically as a non-guttural, but the latter remained within this class after the change. Since about half of the twenty odd rules of Hebrew phonology refer directly or indirectly to the gutturals — this difference in realization is crucial.

As regards spirantization, the frequently held view that this can be described as a phonologically determined phenomenon is refuted. It is shown that the language is in the course of change which has, to some extent, replaced the "old" spirantization rule by increased dependence on the morphology. Differences between adult and child interpretations of spirantization are discussed and theoretical implications arising herefrom are stated. One recently added rule to the grammar involving the dissimilation of a stop to a fricative after another stop in two of the seven verb classes is examined. Arguments and evidence are presented to show that this rule was probably added by adults, and that the rule is "rejected" by children in the developing stages of their acquiring the language. The dissimilation rule actually leads to what may loosely be called "analogy", and the possibility of at least some types of analogy being caused by adults is raised.

A third chapter discusses the ordering of the rule of voicing assimilation, which has to precede a morphologically conditioned metathesis rule. It is argued that certain substantive factors have to be considered in evaluating grammars, as well as purely formal ones; both in connection with this ordering relationship and as regards the metathesis rule itself.

In the final chapter the inter-reaction between schwa-insertion and consonant lengthening is discussed, and a summary of the rules is given.

[12] Barnitz, John Gerard 1978
Advisor: Howard Maclay

Children's development of syntactic aspects of reading comprehension: Pronoun-referent structures

This experiment was conducted to understand the development of comprehension of pronoun-referent structures involving the pronoun "it" by standard English speaking children in grades 2, 4, and 6.

In each grade, comparisons within linguistic factors were made:

1. Referent Type: Pronoun-referent structures where the referent is a noun or noun phrase (NP) vs. Pronoun-referent structures where the referent is a clause or sentence (S).

2. Reference Order: Pronoun-referent structures where the pronoun follows its antecedent (Forward Reference, FW) vs. pronoun referent structures where the pronoun precedes its referent (Backward Reference, BW).
3. Referent Distance: Pronoun-referent structures where the pronoun and referent are within the same sentence (Intra) vs. structures where the pronoun and referent are located in separate sentences (Inter).

These structures were embedded into experimental passages of eight different passage types: NP (FW, Intra), NP (BW, Intra), NP (FW, Inter), NP (BW, Inter), S (FW, Intra), S (BW, Intra), S (FW, Inter), and S (BW, Inter). Four passages were constructed with each of these possible antecedents for the pronoun, one correct antecedent and two distractor items. The forward and backward versions of a story containing the same referent type and referent distance were written with the same content to control for background knowledge influences on the structure. The two versions of each story were alternately assigned to two forms of experimental booklets. Thus, each booklet had the same number of forward vs. backward structures; but no booklet had two versions of the same passage. In the experimental booklet, each of the 16 passages is followed by a question asking a child to recall the antecedent.

The three schools in which the experiment took place serve a predominantly "blue collar" or working class community in East Central Illinois. Protocols of second graders reading below grade level or having significant decoding difficulty were eliminated on the basis of standardized achievement test scores and/or teacher judgements on survey sheets. Furthermore, protocols of children of below average intelligence were not included. This was done to guarantee that all the native English speaking children had enough reading ability and intelligence to perform the task. The mean reading levels for the children whose booklets were used in the analysis were at grade level.

The children were tested within their regular class. Each child was handed one of the two forms of the experimental booklet and was asked to read each story and answer one question based on each story.

Analyses of variance were applied to the data. Along the dimension of referent type, passages containing pronoun-referent structures where the referent is a noun phrase had significantly higher scores than passages with structures where the referent is a sentence. Along the dimension of reference order, passages with forward reference order also had significantly higher scores than passages with backward reference order. There was a strong trend within passages with intra-sentential structures: forward reference had higher scores than backward reference. Yet the reference order factors had less effect on inter-sentential structures. Along the dimension of referent distance, intra-sentential pronoun-referent structures were not significantly higher than inter-sentential structures. Yet for sentence pronominal structures, intra-sentential pronominals had higher scores than inter-sentential pronominals. The opposite occurred for passages with noun phrase pronominals. Although some pronoun-referent structures are well comprehended by second grade (e.g., NP (FW, Intra)), the comprehension of other structures are still being developed well into the middle grades.

These findings are discussed in the light of research findings in reading, linguistics, and psycholinguistics.

[13] Bentur, Esther 1978
Advisor: Charles W. Kisseberth

Some effects of orthography on the linguistic knowledge of modern Hebrew speakers

Languages should be studied without reference to writing systems — that is one of the basic assumptions of modern linguistics. Most speakers intuitively feel, however, that the exposure to the orthographic system clearly contributes to one's knowledge of the language. The object of this study is to empirically demonstrate that the orthographic factor does play a role in the process of grammar formulation, and must therefore be regarded as linguistically significant.

Several linguistic tests were conducted with speakers of modern Hebrew. In order to isolate the crucial factor (i.e. the availability of orthographic information), the tests were presented in both oral and written versions and were run with two groups of subjects: literate and preliterate native speakers.

It is argued that unless it is assumed that orthographic information affects (maybe subconsciously) the linguistic behavior of literate adults, a plausible account for the results found in these tests cannot be provided.

The conclusions of the study are:

1) Exposure to the orthographic system might lead to the reformulation of phonological rules, as additional information which cannot be recovered from the available oral data becomes accessible.
2) Orthographic representations play an important role in identifying and distinguishing between morphemes and consequently in establishing their relatedness in other lexical items.
3) Lexical representation may be modified as a result of the availability of additional linguistic information which can be recapitulated only from the orthography.
4) Orthographic distinctions may lead to the establishing of phonemic contrasts.

Since orthographic information clearly contributes to the process of grammar formulation, and given the accessibility of written data to the average speaker in most modern societies, it is concluded that orthographic systems should be treated as linguistically significant sources of data. Unless such data are incorporated into the linguistic model, the picture one gets about speakers' competence might be partially distorted and far from characterizing adequately what they really 'know' about their language.

[14] Berns, Margie Sue 1985
Advisor: Braj B. Kachru

Functional approaches and communicative competence: English language teaching in non-native contexts

Recently considerable attention has been given to communicative approaches to language teaching, which have grown from the realization that knowledge of grammatical forms and structures alone does not adequately prepare learners to use the language they are learning effectively when communicating with others. It is also an outgrowth of renewed interest in the view of language as communication, a view associated with functional

approaches to linguistics, which have been acknowledged as the theoretical base of the development of communicative language teaching theory and practice. However, the relationship between communicative language teaching and functional approaches to linguistics is far from clear.

This study explores the relationship of functional approaches and communicative language teaching through a consideration of the Prague and British linguistic traditions, concepts such as communicative competence, intelligibility, and model, the nature of English language use and teaching in the contexts of India, Japan, and West Germany, and the application of American and European communicative approaches to the development of English language teaching materials designed for English language learners in these three non-native contexts.

As an applied study, it does not claim to offer solutions to pedagogic problems, but to provide a means by which such problems may be solved. One of its objectives is to show how a theoretical model for linguistics can be used for classroom purposes by relating a linguistic framework to actual classroom materials and activities. It also offers a clarification of linguistic principles, drawn from the functional linguistic models of the Prague School and the British linguistic tradition, which can guide in the development and implementation of communicative language teaching models which are responsive to the needs of a growing number of learners of English in non-native contexts.

This study also addresses applied and theoretical implications for teacher training, cross-cultural communication, models in the pedagogical context, intelligibility in the classroom, and syllabus design.

[15] Bhatia, Tej Krishan 1978
Advisor: Yamuna Kachru

A syntactic and semantic description of negation in South Asian languages

This study accounts for the syntax and semantics of negation in six South Asian languages, four belonging to the Indo-Aryan group (Hindi, Marathi, Nepali and Punjabi), one to the Dravidian group (Kannada) and one to the Dardic group (Kashmiri). In the process of characterizing the formal properties of negation, various theoretical and language-specific problems are discussed.

The dissertation is divided into seven chapters. In the first chapter, the goals, methodology, framework and scope of the dissertation are outlined. Chapter II ("The Syntax of Negation") illustrates that the syntax of the languages under discussion follows two syntactic patterns. In one group of languages, (Hindi and Punjabi) the negative particle is realized in the preverbal position, while in the other group (Kannada, Marathi, Nepali and Kashmiri) it is realized in the postverbal position. It is also shown that in these languages the surface distribution of NEG particles is semantically and not morphologically conditioned. The conditions under which these positional constraints are violated are also presented. A rank order of postverbal NEG languages is established on the basis of fixed order of negative particles. Chapter III ("Deletion and Negation") discusses various negation-sensitive deletion rules. It is shown that such deletion is subject to grammatical and pragmatic conditions. These deletion processes, together with the absence of

scope specification rules, such as NEG-incorporation, set the stage for potential massive ambiguity in the language. Chapter IV ("Quantifiers and Negation") discusses the syntax and semantics of quantifiers under negation. Chapter V ("NEG-Raising") is a pragmatically governed optional rule. The inadequacy of the concept 'optional rule' in current linguistic theory is discussed in detail. Chapter VI ("Negation and Subordination") shows that several constructions, such as causatives and consecutive-action constructions, are not permitted on the grounds of semantic incongruity caused by negation in subordinate clauses. It is also demonstrated that negation in subordinate clauses does not favor reduction processes. The final chapter provides a summary and conclusion.

The dissertation also attempts to relate the topic under discussion to the concept of India as a "linguistic area", and to investigate the strategies which these six languages adopt to resolve potential ambiguities and thus facilitate the processing of negative structures.

[16] Biava, Christina Mary 1992
Advisor: Howard Maclay

Comprehension and recall of figurative language by nonnative speakers of English

This study attempted to extend some of the findings in figurative language research over the past 10-15 years to a population not often tested in this area before, nonnative speakers of English. Most metaphor researchers in psycholinguistics have come to believe that nonliteral language is a vital component of language, not a "special" part that is acquired only after literal language has been acquired or that requires a different type of processing than literal language. The few studies done on nonnative speakers, on the other hand, concluded that figurative language was harder for these speakers, an aspect of the L2 that was to be avoided.

This study tested 124 international students in two intensive English programs in the spring of 1991. The study included two parts, a multiple-choice test of comprehension and a cued recall task. The three hypotheses that were tested in this study — that comprehension of literal and figurative items would be equal, that comprehension of metaphor and simile items would be equal, and that recall of literal and figurative items would be equal — were all supported, using ANOVA procedures. In the comprehension results, there was no statistically significant difference between literal and figurative items and metaphor and simile items. This held true, regardless of cultural background or English language proficiency. The third hypothesis was also supported in that figurative recall was not only as good as literal recall, but significantly better than it.

Thus, the results of this study, while supporting a decade of findings in psycholinguistic research on metaphor, make a somewhat counterclaim for second language researchers. However, it must be stressed that the handful of figurative language studies using nonnative speakers are not exactly comparable. Many of those studies used highly conventionalized figurative language, such as idioms, while this study used novel metaphors. Also, most of those studies investigated production while comprehension and recall were the subject of the present study.

[17] Bolozky, Shmuel 1972
Advisor: Charles W. Kisseberth

Categorical limitations on rules in the phonology of modern Hebrew

My purpose in this thesis is to show that in the morpho-phonological component of Hebrew, it is natural for rules to be restricted to grammatical categories, and that vacuous extension of the domain of categorial rules to the whole grammar should be avoided — even if "it works". Claims of this nature have been made before, but I will be trying to point out the extent to which they are true of Modern Hebrew. I wish to show that it is particularly natural for rules to be limited to the verb system due to its great productivity, especially with regard to borrowings. *i/e a* (Chapter IV), two vowel deletion rules (Chapter V) and two sub-rules of stress (Chapter VI) will be given as examples of rules that are categorial, and I will argue that they should remain so. Apparent scattered manifestations of such rules beyond the category concerned should be treated separately. Chapter VII gives an illustration of a constraint that used to be general and recently has narrowed down to the verb; in other words — an actual proof that certain linguistic processes tend to be limited to a category. Chapters I, II and III are introductory in nature, and thus do not constitute an integral part of the body of this thesis: Chapter I provides the general background for Standard Modern Hebrew and for root-pattern analysis, Chapter II explores various possible treatments of the underlying representation, and Chapter III discusses the possibility of not representing gutturals underlyingly and how it would affect the whole analysis.

Previous publications, the findings of which are incorporated in this thesis, are "i/e Alternations in the Hebrew Verb and the Question of 'Vacuous Generalization'", *Hebrew Computational Linguistics* No. 5, Bar-Ilan University (Israel), February 1972.

"On Morphological and Phonetic Constraints in Modern Hebrew", to appear in *Hebrew Computational Linguistics* No. 6, Bar-Ilan University (Israel).

[18] Bouton, Lawrence F. 1969
Advisor: Robert B. Lees

Pro-sententialization and the DO IT construction in English

In his thesis, Ross (1967) suggested at one point that all sentences containing non-stative verbs originate as complement sentences embedded on instances of *do*. That same year, Anderson (1967) also proposed a structure of this sort. His contention: that a large class of verb phrases "should be represented as embeddings, the complements of the verb *do*." Furthermore, Anderson was writing within the framework of a non-cyclic transformational theory. This thesis will set out to determine what fundamental assumptions must be made if one is to adopt the proposals of Ross and Anderson, and whether these assumptions are sound within a transformational grammar that does include a cyclic transformational component.

My intention is to test the proposal that the phrase *do it* be derived from a deep structure *do* + a complement sentence object within the framework of a transformational grammar that employs the transformational cycle. In the process, we will review some of the evidence presented by Anderson and present other evidence that bears on the question we are investigating. We

will start in chapter two by asking whether pronouns representing sentences or verb phrases need to be assumed to be derived from underlying sentences or whether they can occur as pro-forms in the deep structure itself. We shall then turn our attention to what constituents must underlie the anaphoric *it* of *do it*. In chapter three, we will compare these minimal constituents of the complement of *do* with those of other sentences and find them to be essentially the same. In the process, we will take issue with Anderson's claim that the identity constraints on pronominalization of sentences require that non-identical constituents in such sentences be deleted before the pronominalization rule applies to them. By tying *do it* so closely to other verb + complement constructions, we will have presented a situation in which considerations of simplicity will urge that the deep structure *do* + complement proposal be adopted. In chapter four, we will try to make the proposal work, analyzing some quite difficult problems inherent in it as it was put forth by Anderson. And finally, in chapter five, we shall draw what conclusions we must as a result of our confrontation with those problems.

[19] Burt, Susan Meredith 1986
Advisor: Jerry Morgan

Empathy and indirect quotation in Japanese

This dissertation is concerned with resolving a disagreement in the linguistic literature about indirect quotation, specifically in Japanese. On the one hand, Kuno (1972) and authors of related work (Kuno & Kaburaki (1977), Kamada (1981)) have argued, partially on the basis of so-called "empathy" phenomena, that indirect quotation must be grammatically related to direct quotation, and that the mechanism of deriving the former from the latter is most appropriate. On the other hand, works such as Banfield (1973) and Gallagher (1970) have argued against such derivations. Clearly, if the position taken by this second group of authors is to retain its validity, it is necessary to reconcile the data of Kuno and others with the non-derivational position. This is the aim of this dissertation.

In order to make the argument accessible, the first chapter gives a general outline of the types of data under discussion. It discusses, first, the phenomenon of empathy in Japanese, and second, the nature of indirect quotation in Japanese. The first chapter also gives examples showing the interaction of empathy (Kuno & Kaburaki 1977) and for theories of indirect quotation. The second chapter reviews analyses of empathy and of indirect quotation, those of Kuno (1972), Kuroda (1973a), Kuno & Kaburaki (1977), Ogura (1978) and Inoue (1979).

Chapter III gives arguments, both from English and Japanese, against the analysis that derives indirect quotation from direct. Chapter IV applies Cole's (1978a) idea of propositional and quotative complements to indirect quotations containing empathy verbs, and shows how the idea of these two kinds of complements can illuminate some aspects of the data. This chapter also shows how pragmatic principles can explain exceptions in the data to a propositional/quotative analysis.

Chapter V builds on the data of Chapter IV and proposes an explicitly pragmatic analysis to patterns of empathy in indirect quotation in Japanese, by proposing a new pragmatic maxim, the Viewpoint maxim. This chapter also discusses the question of status — grammatical or cultural — of empathy phenomena in general.

[20] Carreira, Maria Margarita 1990
Advisor: Michael Kenstowicz

The dipthongs of Spanish: Stress, syllabification, and alternations

The intricate system of Spanish diphthongs has generated much discussion in Spanish phonology as well as in the development of numerous theories of syllable structure. In this dissertation, it is my claim that many of the difficulties posed by the diphthongs of Spanish can be dispensed with if we assume that they are derived structures rather than primitive syllable types. Falling diphthongs are derived prior to initial stress assignment from two adjacent syllable nuclei, where the second nucleus is [+high]. Rising diphthongs are created subsequent to the assignment of stress from a sequence of a [+high] vowel followed by an onsetless syllable. Surface differences in the syllabicity of words like Mar[y]o and Maria then, are encoded underlyingly in terms of stress, rather than in terms of a feature, or a structural property of high vowels. Such a proposal reduces the inventory of Spanish syllable types and allows us to eliminate the feature [syllabic]. The Sonority Principle and the two-mora limit per syllable determine syllabic wellformedness. This makes it possible to uphold a maximally simple model of the syllable, with no inner structure.

This analysis of diphthongs also leads to a more explanatory account of the alternating diphthongs of Spanish ([ye]~[e] and [o]~[we]). It is my claim that the monophthongal forms of the diphthongs are derived from the intermediated monomoraic structures: {ye} and {wo}. These diphthongs monophthongize in unstressed environments as a result of a ban against shared feature matrices in monomoraic diphthongs that are in a metrically weak position. Overall, the analyses presented uphold a minimally marked model of Spanish syllable structure.

[21] Cassimjee, Farida 1986
Advisor: Charles W. Kisseberth

An autosegmental analysis of Venda tonology

This thesis is an attempt to explore the tonology of Venda, (more correctly, Tshivenda), a Bantu language spoken in the Zoutpansberg district of the Northern Transvaal in South Africa as well as in parts of Zimbabwe. It represents the first attempt to look at Venda from the perspective afforded by the autosegmental framework for phonological analysis. We also consider at times whether certain other theoretical notions could be resorted to in an attempt to get a better understanding of Venda tone. In particular, we have considered whether the theory of underspecification could be used to account for the well-known asymmetry in Bantu languages (including Venda) between High and Low tones. And we have considered whether the theory of lexical phonology can contribute to a better understanding of problems relating to the domain of application of certain tonological rules in Venda. We conclude, however, that neither of these theories appears to contribute very significantly to the understanding of Venda tone, though some aspects of Venda are relevant for the elaboration of these particular theories.

Four chapters make up the body of the thesis. In Chapter Two, we examine the tonal alternations exhibited by Venda nominals. Chapter Three presents an analysis of a number of major affirmative verb tenses. Chapters Four and Five

primarily focus on further aspects of the verbal system, but with forays into other, tonally-related matters (various "inflected" forms of the noun, adjectives).

[22] Cerron-Palomino, Rodolfo Marcial 1977
Advisor: Michael Kenstowicz

Huanca-Quechua dialectology

This study is largely based on previous work done by the present writer, most of which appeared in the form of working papers within the *Documentos de Trabajo* series under the auspices of the Center for Applied Linguistics of San Marcos University (Lima). Aside from being a near native speaker of the communolect spoken in his native district of Chongos Bajo (Huancayo), he spent more than one month on two occasions (1972 and 1975), traveling from town to town and from village to village, along most of the Quechua speaking communities of Huancayo, Concepcion and Juaja. Besides, he spent considerable time working with different informants in Lima. The material gathered in the field and during his data-eliciting sessions is largely preserved in magnetophonic tapes and in his field-work notebooks.

Spanish being the language of the dominant culture, it is normal to expect that Quechua is more influenced by it than vice versa. This influence is most noticeable in the lexicon, as usual, but as a result of the massive incorporation of Hispanisms, the phonology of the native language has become seriously altered. This is true especially for the consonantal system, which has adopted the Spanish voiced stops; the same is true for the syllabic pattern, for now the language has consonant clusters, previously non-existent (except ambisyllabically). The vowel system, however, has proved to be more resistant, since the Spanish mid vowels /e,o/, incorporated in most Quechua varieties, are normally accommodated as /i,u/ within the native language. This and other aspects of the influence of Spanish upon Huanca-Quechua has been treated extensively in Cerron-Palomino (1975); see also Chapter 3, where more details are provided.

As is the case in a (unidirectional) language contact situation, however, the influence of a language upon another cannot be measured as if the two languages were discrete and homogeneous entities; rather one has to deal with a continuum. Thus if it is true that a variety x has incorporated some Spanish phonemes into its phonemic system, it is equally true that a variety y has those phonemes variably or simply does not have them yet, depending, for example, on the degree of bilingualism of the speakers. Thus the fact that a language has or has not been influenced by another, especially when this is the language of prestige, can only be determined to the extent that we take into consideration socio-economic and regional variables.

[23] Cervin, Richard S. 1990
Advisor: Hans Henrich Hock

Greek word order and linguistic typology

Ancient Greek is a language which has a high degree of freedom in the placement of words/phrases within the sentence, so much so that there have been competing claims regarding the so-called 'basic' or 'unmarked' order of constituents. Short (1890) and Kieckers (1911) claim that SVO is the 'basic' order, while Ebeling (1902), Fischer (1924), Frisk (1932), and Dover (1960)

maintain that SOV is 'basic'. More recently, Friberg (1982) and Radney (1988) have put forth the claim that Greek is VSO.

In this paper I will show that a typology based on syntax is inappropriate for Ancient Greek because Greek does not behave in any way consistent with one given type, but rather exhibits behaviour which is characteristic of all three types, VSO, SVO, SOV. I will argue that the 'basic' order in Ancient Greek cannot be determined from statistical or syntactic analyses, and that a typology based on pragmatics as proposed in Payne (1987) and Dooley (1987) is more appropriate for Ancient Greek than a syntactically based typology.

[24] Chang, Suk-Jin 1972
Advisor: Chin-Wu Kim

A generative study of discourse with special reference to Korean and English.

This thesis is an attempt to describe in the general framework of generative semantics, some aspects of discourse in a Discourse-frame, characterized as an abstract frame consisting of speaker, hearer, time of utterance, pace of utterance and manner of utterance. In Chapter 2, these deictic elements are formally introduced, and their various functions in linguistic descriptions have been discussed in a systematic way. In Chapter 3, the deictic element of manner of speaking is described as the source of various discourse levels and honorification in Korean and discourse operator 'honorific' is introduced. In Chapter 4, another discourse operator 'information focus', originating in the discourse structure of new information in a given discourse situation is introduced, and its function in emphatic stress and clefting, its interaction in negation with proposition has been described. In Chapter 5, sentence types, declarative, interrogative, imperative and propositive are examined in terms of the modality of the speaker and hearer, with reference to Korean and English. Important notions in this approach to discourse are indices of speaker and hearer, underlying the discourse-frame.

[25] Chao, Huey-Ju 1992
Advisor: Chin-Chuan Cheng

Aspiration in Chinese

This dissertation studies aspiration in Chinese in these four areas: the temporal relationships between aspiration and the vowel of the syllable, the perception of aspiration, the correlation between pitch and aspiration, and the role of aspiration in a historical change in Chinese. Data based on 144 words with aspiration contrasts were derived from the experiments which involved production and perception by a total of 28 Chinese speakers. On the basis of the measurements of acoustical characteristics of the voice onset time and the lengths of the syllable, a constant ratio model has been proposed to describe the timing relationships among the elements within a syllable. The perceptual experiment tested the cues of aspiration by deleting the portion of the voice onset time from the syllable on the front, back, middle and both ends. The results are reported and discussed. The effects of aspiration on intrinsic tone heights in Mandarin were measured and the significance calculated. Finally some attempts are made to solve the development of aspiration from voiced obstruents under the condition of different tones from Middle Chinese to modern dialects.

[26] Chen, Ching-Hsiang Lee 1974
Advisor: Chin-Chuan Cheng

Interactions between aspects of noun phrase structure and restrictions on question formation in Mandarin Chinese

This dissertation raises the question as to why it is not always the case in Mandarin Chinese that a corresponding interrogative exists for every noun phrase in a declarative sentence. Given the assumption that declaratives and interrogatives are related, and the assumption that this relationship is to be captured by some device such as a transformational rule of Question Formation or a phrase structure rule which introduces a question morpheme, it is claimed that the non-occurrence of certain corresponding interrogatives must be explained in terms of the blocking of the relating device. This blocking takes the form of constraints which state restrictions on the occurrence of question morphemes.

In order to formulate the constraints some notions connected with the properties of noun phrase structure are needed, particularly the features of definiteness/nondefiniteness and restrictiveness/nonrestrictiveness. These aspects are first defined and shown to have their independent places in the description of the language in the sense that such notions bear syntactic consequences.

The process of Relative Formation is studied in considerable detail since, in the expansion of noun phrase constructions, Relative Formation incorporates additional noun phrases which are in turn potential positions for the occurrence of a question morpheme. It is pointed out that a principle of primacy hierarchy is necessary to account for the varying acceptability of relativization in Mandarin Chinese.

Having introduced and independently justified several important aspects of noun phrase structure, a set of constraints on Question Formation which makes crucial use of these features is proposed. These constraints are that (1) no definite NP nor any element inside such a NP may be questioned, and (2) no element inside a nonrestrictive modifier may be questioned. Other factors which bear on the acceptability of an otherwise grammatical interrogative are also discussed.

The dissertation ends with some speculation on the sources of the constraints as essentially involving the notions of 'function,' 'propositional content,' and 'illocutionary act,' and a prediction that, if the speculation is indeed correct, it should be the case that no language could violate these constraints.

[27] Cheng, Chin-Chuan 1968
Advisor: Theodore Lightner

Mandarin phonology

A Chinese syllable is traditionally divided into three parts: the initial, the final, and the tone. The final is that part of the syllable which extends from the first non-consonantal segment to the end of the syllable. The initial, then, is anything else, possibly null, that precedes the final. The tone is superimposed over and belongs to the whole syllable. The final is further analyzed as always consisting of a main vowel or nucleus, sometimes a medial, the segment preceding the main vowel, or an ending, any segment including

consonants following the main vocalic segment including consonants following the main vocalic segment. The final excluding the medial can be called "rhyme" since words rhyme in spite of differences in the medial.

This traditional analysis can be traced back to as early as the sixth century. In 601 A.D. a rhyme book called Qièyùn was published. In the book lexical items are first grouped in terms of tones. At that time there were four tones: píng "even," shçang "rising," qù "going," and rù "entering." In each group the items are then grouped in between fifty and sixty rhymes. Every item is spelled with two characters; the first character represents the initial, the second the final and the tone. More specifically, the initial of the first character represents the initial and the final of the second character represents the final and the tone.

The traditional Chinese assumption that Chinese tone belongs to the whole syllable seems correct; at least it has proved itself useful in both synchronic and diachronic description through the course of time. But the support of this claim lies in a detailed study of a type of the Chinese dialects. I shall describe Mandarin phonology in terms of this traditional understanding first, and then come back to examine this assumption and to explicitly demonstrate that other alternatives are incapable of accounting for many facts in modern Mandarin in a linguistically significant way. This thesis is an attempt to describe Mandarin tones in detail: their features, tone sandhi, tone neutralization, etc. It is also an attempt to answer questions that are often overlooked or vaguely answered, questions such as those about the nature of Chinese tone, those about the reality of contour tones, etc.

An adequate linguistic theory must be established on the basis of detailed descriptions of specific languages. At the same time, a grammar of a language must receive sufficient theoretical constraints. I shall first state the framework within which I am describing the phonology of Mandarin. The general framework that is now being shown quite promising is the one that incorporates the theory of markedness.

[28] Chishimba, Maurice Mulenga 1984
Advisor: Braj B. Kachru

African varieties of English: Text in context

This is a sociolinguistic study of the characteristics of the English language used in Africa. Because English has become a world language, it is assumed in this study that non-native speakers in Africa, Asia and other parts are slowly developing new varieties of English. These varieties have already been recognized as 'Indian English', 'Nigerian English', 'Ghanaian English', 'Singaporean English' and so on.

The study shows that the English being used in Africa is slowly undergoing a process of contextualization. That is, new forms and usages are emerging which express the meanings and serve the functions of African local conditions. This process involves the use of several linguistic strategies, such as translation, semantic shifts and extension, calques, lexical hybridization, repetition and reduplication, and transfer.

In addition, the study shows that the new varieties of English also have discourse patterns, structure and strategies which deviate from native English. These are found to be in narrative types, coherence in discourses, topic-comment relations and the social significance of proverbs, indirectness and

circularity in verbal interaction. For these reasons, the analysis gives substantial attention to the influence of social markers of speaking such as age, sex, role, status, turn-taking, etc.

It is concluded that the English language in Africa is being acculturated to accommodate the context of situations in which it is used. In other words, the meaning systems which are expressed by African languages are being transferred to English, and these meanings remain either as a substratum or cause the syntax, semantics and pragmatics of native English to be modified. It is suggested that linguistic concepts such as communicative competence, meaning potential, verbal repertoire and language variation and contact should, when used in connection with English as a second language, be understood in terms of the socio-cultural settings in which English is being used.

[29] Cho, Euiyon 1988
Advisor: Jerry Morgan

Some interactions of grammar and pragmatics in Korean

By now it has become clear among linguists that there are various kinds of correlations between syntactic form and pragmatics. But the fact that there are interactions between grammar and pragmatics cannot be taken as prima facie evidence for the position that pragmatics is part of grammar or that grammar is part of pragmatics. This study, rather, argues for a position which keeps pragmatic features strictly out of grammar and gives functional explanations of linguistic forms in pragmatic terms. This position is referred to as a 'Modular Account of Language' in the present study.

The modular account of language assumes that (1) knowledge of language is distinct from knowledge about the use of language, and that (2) the two independent systems, grammar and pragmatics, are connected to each other.

To provide evidence for the modular account of language, I present theoretical arguments and reanalyze three areas of grammar-and-pragmatics interactional phenomena in Korean; sense adjective verb constructions, subject honorification, and periphrastic causative constructions. In each case it will be shown that both formal and functional accounts of them given under the modular account of language is superior to the accounts under the framework mixing grammar and pragmatics.

[30] Cho, Seikyung 1992
Advisor: Howard Maclay

Universal Grammar and the Subset Principle in Second Language Acquisition: The Acquisition of the Governing Category Parameter by Adult Korean Learners of English

The goal of developing a theory of language acquisition is to account for how language learners construct the grammar of their target language and how such knowledge is acquired. Even though recent advances in generative grammar have made a considerable contribution to the development of first language (L1) acquisition research, no one has yet completed a full account for a single human language because of its tremendous complexity. It is apparent that research on second language (L2) aquisition is an even more complex, and therefore even more demanding, task to carry out, since in L2 acquisition, at least two languages are involved; the learner's native language

and a second language. Futhermore, in L2 acquisition research, we have to take a number of additional variables into consideration from general factors like age, the length of education, and the type of exposure to the target language, to individual factors like personality, aptitude, motivation, etc. Therefore, in this relatively undeveloped field of study, fundamental questions still remain not fully answered. How do L2 learners construct the grammar of the target language, and what kind of process is involved in such a construction of the grammar? What is the role of previous knowledge of the native language in the L2 acquisition process? In the following sections, I will briefly review traditional theories on these problems; the basic tenets, claims, and weaknesses of Contrastive Analysis and Creative Construction and also look at Universal Grammar as an alternative theory to those traditional ones.

[31] Choi, Yeon Hee 1988
Advisor: Yamuna Kachru

Textual coherence in English and Korean: An analysis of argumentative writing by American and Korean students

This study investigated textual coherence in American and Korean students' argumentative texts in English and Korean. With the ultimate goal of exploring the relationship between (a) linguistic features and text coherence and (b) coherence and culture, it compared 76 English and 49 Korean essays written by one group of American students and three of Korean students, including Korean ESL students in America and Korean EFL students in Korea, with respect to the following features: interactive roles of linguistic units and text structure; linguistic and textual features that disturb the reader's reconstruction of the writer's message; and components significantly affecting coherence evaluation.

Three major types of linguistic features marking interactive acts (connectives, modal verbs and tense, and specific types of lexical items) were shared between the English and Korean texts. The computer analysis based on these markers showed that interactive functions were reflected relatively highly in surface linguistic forms.

Five major types of text structure were identified from the four groups of argumentative writing: claim-justification-conclusion, problem-solution-conclusion, situation-problem-solution-conclusion, introduction-elaboration-conclusion, and introduction-development-transition-conclusion. The use of the five patterns by the four groups of writers revealed that cultural context, the extent of exposure to English rhetoric, and the writing conventions in the native language affect text structure.

Nine types of coherence problems were identified by American and Korean readers: topic-structuring, cohesion, justification, conclusion, semantic/pragmatic, style, vocabulary, grammar, and mechanics. Among three variables (language, writers, and readers) the reader's ability to decode the writer's message was the key factor for the coherent interpretation of a text. American readers tended to mark textual and contextual problems, while Korean readers were more sensitive to paragraphing and sentence-level features.

American and Korean evaluators strongly agreed on the overall impression of the coherence of a text; however, a comparison of their holistic

and analytic evaluations showed that their judgements were based on somewhat different criteria.

This study suggests that native speakers of English and Korean have different notions of text coherence and that these are closely related to the writing conventions based on their cultures.

[32] Chung, Raung-fu 1989
Advisor: Chin-Chuan Cheng

Aspects of Kejia phonology

This thesis is concerned with four aspects of Kejia phonology: initial consonants, diphthong representations and syllabification, the domain of tone sandhi, and the notion of geminate inalterability. The analysis is in line with the non-linear framework of generative phonology.

Two issues are investigated in terms of initial consonants: palatalization and onset friction. We conclude that the nasal palatal *ɲ* has two UR's: *n* and *ng*. Moreover, we argue that the fricatives *v* and *j* are derived from high vowel spreading. As for diphthong representations, we propose that there are two different representations: one for a rising diphthong and one for a falling diphthong. In addition, we propose that there are at most three skeletal slots for a Kejia syllable. These proposals account for two generalizations: no consonant can follow a falling diphthong, and a falling diphthong differs from a branching rime. As far as the domain of tone sandhi is concerned, we postulate that it is defined by the syntactic structure on the basis of domain-c-command (Kaisse 1985). The last topic is gemination and geminate inalterability. We conclude that gemination in Kejia results from spreading and that there is no inalterability effect in Kejia geminates.

[33] Chutisilp, Pornpimol 1984
Advisor: Braj B. Kachru

A sociolinguistic study of an additional language: English in Thailand

This study seeks to provide an explicit analysis of a 'performance variety' of English as used in Thailand by the Thai people. It is an examination of the linguistic and sociolinguistic characteristics of English in the Thai context, where English serves a vital role as an additional language. The ways in which English is patterned and organized support the concept of 'Thainess', i.e., Thai English with its unique characteristics. The 'deviations' at different levels in what has been termed here 'Thai English' are explained in terms of social and cultural transfers from the native language. It is further claimed that such Thainess in English can be best understood in the Thai context of situation where English is being used. The discussion, therefore, includes shared rules of speaking and interpretations of speech performance, shared attitudes regarding language forms and uses, and shared sociocultural understandings with regard to Thai norms and values in Thai settings.

It is evident that English in Thailand has been acculturated and as a result, various innovations have taken place. These innovations can be exemplified by linguistic strategies that include translation, shifts, hybridization, reduplication, repetition, transfer, and the use of proverbs and idioms from the Thai language. Additionally, development of typical Thai strategies in discourse and style are discussed and illustrated.

This dissertation is composed of the following eight chapters: 1. Introduction; 2. Linguistic Context of Thailand; 3. Varieties of English: Theoretical and Functional Approaches; 4. The Spread of English in Thailand; 5. Towards Thai English; 6. Style and Discourse in Thai English; 7. Theoretical and Applied Implications; and 8. Summary and Directions for Future Research.

Although the study does not discuss specific pedagogical concepts and approaches in detail, it does conclude with theoretical and applied implications, i.e., the notions of speech acts and pragmatics, stylistics, communicative competence, and bilingualism are discussed and it is pointed out as to how the teaching and learning of English in Thailand, will be affected as a result of studies such as this one.

[34] Cole, Peter 1973
Advisor: Charles W. Kisseberth

Indefiniteness and anaphoricity: The analogical extension of a semantically based constraint

This dissertation is an examination of a facet of the general problem of the relationship between syntax and semantics. It has been proposed in a variety of works written within the framework of semantically-based grammar that the most underlying syntactic structure of a sentence and the semantic structure of a sentence are coterminous.

In the chapters which follow I trace the ontogenesis of a syntactic constraint which appears to have its inception in semantics. As the constraint has developed in English, however, it appears to have become increasingly arbitrary from the point of view of semantics. Analogical generalization has led to the extension of the constraint from a semantically coherent class of items to a morphologically coherent but semantically incoherent class.

This thesis as a whole concerns the way in which the semantic basis for a syntactic constraint may become obscured. The results of my study suggest that it is inadequate to posit semantics alone as providing naturalness conditions for syntax. Rather, as was suggested by Jespersen (1924:45-47), syntactic processes would appear to be the result of a tension between meaning and form. It is this bidirectional pressure which may explain the juxtaposition in syntax of logically and morphologically motivated properties of language.

[35] Cureton, Richard Dozier 1980
Advisor: Braj B. Kachru

The aesthetic use of syntax: Studies on the syntax of the poetry of E. E. Cummings

On the theoretical level, this dissertation develops, illustrates, and documents an 11-point typology of syntactic aesthetic effects which provides a working theoretical model for the study of the aesthetic use of syntax. Following Leech (1969, 1974) and Nowottny (1962), it is argued that these effects represent the various ways authors and speakers use syntax to "particularize" (perceptually, emotively, and conceptually) the informational content of a text or discourse — these effects being the syntactic realizations of more general aesthetic effects (i.e., iconicity, focus, emphasis, pace, tension, surprise, ambiguity, development, parallelism, transcendence, and stance) which can also be produced at other levels of linguistic structure (phonetic,

orthographic, morphological, or semantic) or by other aspects of literary form (e.g., poetic line, metrical structure, or narrative perspective).

It is argued that, by providing a direct link between linguistic structures and aesthetic functions, this theoretical model can serve as a much-needed corrective to the overly formal analyses of literary syntax in linguistic stylistics while providing a productive supplement to the overly content-oriented analyses of literary syntax in the mainstream of literary research and pedagogy. This theoretical model, it is maintained, provides a framework within which one can make statements about, not just the formal, but the aesthetic styles of speakers and authors across historical periods, literary genres, and levels/aspects of linguistic and literary structures — thus making a truly aesthetic rather than merely formal poetics possible.

On the practical level, the dissertation applies this theoretical model to the analysis of several previously unexamined aspects of E. E. Cummings' syntax — demonstrating that a broad range of Cummings' syntactic deviations produce poetically significant aesthetic effects. Chapter 2 examines how Cummings exploits the semantic constraints on English derivational morphology (*un-*, *-ingly*, *-fully*, *-lessly*, *-ly*, and the nominal conversion of quantifiers, pronouns, verbs, and function words) to populate his transcendental poetic "world" with dynamic, personal, self-conscious, unique objects and individuals — regardless of normal referential distinctions; Chapter 3 provides a semantic analysis of Cummings' much discussed line "he danced his did" — demonstrating that the conversion of *did* to a noun and *dance* to a transitive verb leads to complex, poetically productive ambiguity; Chapter 4 illustrates Cummings' use of fifteen types of syntactic icons (icons of existence, substance, complexity, spatial contiguity inclusion, inversion, symmetry, disorder, fusion, occurrence, movement, temporal contiguity, simultaneity, interruption, and intrusion) through which he perceptually "presents" the thematic content of his poems; Chapter 5 explores the ways in which Cummings exploits the semantic constraints on the order of prenominal modifiers in English to convey his poetic epistemology which asserts the abnormal centrality of the projective, unique, close, immeasurable, subjective and value-laden attributes of objects; and Chapter 6 analyzes how Cummings orchestrates the syntax in one poem ("supposing i dreamed this") to simultaneously produce five different aesthetic effects which support the thematic content of the poem. In conclusion, it is argued that, taken together, these five studies demonstrate the critical power of this aesthetically-oriented approach to the analysis of literary syntax while at the same time laying the foundation for a reevaluation of the aesthetic purpose and success of Cummings' unique syntactic style.

[36] D'souza, Jean 1987
Advisor: Braj B. Kachru

South Asia as a sociolinguistic area

The aim of this study is to provide a clear characterization of the concept 'sociolinguistic area' and based on this characterization to define South Asia as a sociolinguistic area.

The questions addressed in the study are:

1) What is meant by 'sociolinguistic area'?
2) What is the importance of the concept?

3) What are some of the features that may be seen as characteristic of a sociolinguistic area?

In order to answer these questions other uses of the term 'sociolinguistic area' are examined and a working definition is formulated. The importance of the concept for an understanding of linguistic convergence is stressed and South Asia's claims to being considered a sociolinguistic area are stated. As the claims depend crucially on the existence of a common 'grammar of culture' for the region, factors which clearly illustrate the relationship between language and culture are taken up for discussion. The features studied are: diglossia, echo formation, interactional strategies, explicator compound verbs, and modernization of language. These features are studied in languages belonging to the Austro-Asiatic, Dravidian, Indo-Aryan and Tibeto-Burman language families. It is shown that they function in much the same way across language families and their use may be seen as dictated by the grammar of culture of the area. This provides clear evidence that language and society are intimately intertwined and each affects the other in very definite ways.

The study provides insights into the South Asian linguistic context. It claims that the term 'sociolinguistic area' subsumes the term 'linguistic area' because a linguistic area is the result of the prior formation of a sociolinguistic area. The study shows that South Asia has a common grammar of culture which affects linguistic diffusion and language change and provides social motivation for language change. Finally, it shows that despite surface diversity, there is an underlying unity in South Asia and this makes it a sociolinguistic area.

The study has implications for both theoretical and applied aspects of future research. It broadens the scope of research for our understanding of sociolinguistic phenomena, it provides a framework for comparison of sociolinguistic areas, and contributes to our understanding of formal innovations in functional terms. In addition, it has implications for language planning and second language teaching.

[37] Dabir-Moghaddam, Mohammad 1982
Advisor: Yamuna Kachru

Syntax and semantics of causative constructions in Persian

The present study deals with syntax and semantics of causative constructions in Persian. The major points of focus in this study may be summarized as follows:

1. Chapter 2 describes periphrastic causatives in Persian. In particular, the categories of (a) Nominative-Subjunctive Causatives, and (b) Accusative-Subjunctive Causatives are discussed in detail. The members of the former category are further divided into (i) 'Unmarked Causatives', and (ii) 'Permissive Causatives', and it is shown that the members of the latter category constitute 'Coercive Causatives'.

2. Chapter 3 discusses lexical causatives in Persian. In this chapter, on a purely morphological basis, lexical causatives in Persian are classified into the three classes of (a) root, (b) morphological, and (c) auxiliary causatives. In this chapter, it is argued that only a lexicalist analysis can adequately account for the facts of the lexical causatives in Persian. A slightly modified version of Jackendoff's

Proposal (1975) is introduced to capture the morphological, grammatical, and semantic regularities between non-causal and their associated lexical causal verbs in the lexicon.

3. Chapter 4 focuses on a side by side study of the periphrastic and lexical causatives in Persian. In this chapter, the similarities, differences, and the interactions between these two levels of causation in Persian are spelled out.

4. Chapter 5 addresses the question of passive in Persian. The question of passive has been a controversial issue in the transformational treatments of Persian. While a group of scholars have postulated (with very little discussion) the existence of passive in Persian, Moyne (1974) has called this construction inchoative. In this chapter, these two approaches are discussed and a new proposal for the treatment of passive in Persian is suggested. In particular, it is claimed that a distinction should be made between unambiguous/transparent passives and ambiguous/opaque (i.e., ambiguous between an inchoative and a passive reading) passives in Persian. It is argued that the transformational rule of passive in Persian is a governed rule in the sense that it applies to a semantically definable class of verbs — i.e., verbs that express a volitional act.

[38] Dalgish, Gerard Matthew 1976
Advisor: Charles W. Kisseberth

The morphophonemics of the OluTsootso dialect of (Olu)luyia: Issues and implications

This thesis is an investigation of the major morphophonemic processes of the OluTsootso dialect of (Olu)Luyia, a Bantu language of Kenya spoken in Guthries' Zone E. 32b., north and west of Lake Victoria. The morphophonemic processes involving nasal interactions, vocalic lengthening and reduction alternations, and the various processes connected with the complex verbal derivational suffixal phenomena form the major topics of this work. The issues that are raised by the analyses of these phenomena, and their theoretical implications for future research, are developed in detail after a through presentation of the facts. This thesis is an investigation of a previously unexplored language, and so is of importance in preserving and adding to our store of knowledge of the languages spoken today. The data alone can be used to expand and enhance phonological, historical, and general Bantu linguistics studies, and thus is useful for future research.

A second justification for the present work is the thoroughness and reliability of the research. This has been accomplished by conducting original full-time informant work extending over a period of a year and a half, working with a native speaker of the language. It has been possible, therefore, to investigate various processes quite extensively, to correct early mistakes, and to obtain accurate and spontaneous judgements and intuitions concerning both the facts and the analyses.

The last point raised leads to another reason for the work. The research has been conducted within a generative phonological framework, and relates the original and extensive data directly to current theory. Some of the data and analyses proposed here raise serious and interesting problems for certain

theoretical positions, in that in many cases, the phenomena resist uncomplicated morphophonemic rule and rule ordering solutions. Alternative analyses are presented here, and are shown to have interesting explanatory power. Now, in many cases, these phenomena have been discovered only after a very thorough investigation of the categories involved. Thus, it is here again that the importance of working with a native speaker is manifest. Without frequent checks, careful elicitations, and a painstakingly thorough investigation of a great deal of data, it is quite likely that the evidence for some of these processes would never have been obtained, and none of the more interesting analyses would have been possible. Thus, the reliability of the data is a direct function of the nature of the investigation, while the analyses which result are therefore correspondingly strengthened and supported.

[39] de Souza, Jose Pinheiro 1982
Advisor: Braj B. Kachru

An integrated approach to child bilingualism

The present study is intended as a threefold contribution: (1) to the field of language acquisition in general; (2) to the particular field of child bilingualism, and (3) to the field of general linguistics.

The focus of the work is on the description of child bilingualism, especially the phenomenon of cross-influence between L1 and L2, and more particularly the influence of L2 on L1.

The analysis is based on data collected from Brazilian children in their process of acquiring and using Portuguese as their first language and English as their second language.

The study is approached from an integrated view of human language, its analysis, acquisition and use. In this sense, a state-of-the-art summary of the main currents in the field is provided, and a new way of viewing linguistic competence is proposed. It is argued that the notion of 'integrated linguistic competence' is more adequate than the other notions of competence found in current literature because it can fit any description of human language (including analyses of child language and of bilingualism), while the other views of linguistic competence can fit only partial aspects of language description.

The cross-influence between L1 and L2 has been investigated along the first twenty-four months of the subjects' being in the USA. Three stages of cross-influence have been identified: Stage I (months 1-8), the period in which the influence of L1 on L2 is more transparent than the influence of L2 on L1, Stage II (months 9-16), when L2 dominates L1, and Stage III (months 17-24), the period in which the L1 influence on L2 is almost nil, and the L2 influence on L1 is less transparent than in Stage II.

The interaction between L1 and L2 has been examined in terms of language transfer, code-switching, and code-mixing. The phenomenon of language interference has been described in all levels of linguistic analysis, viz.: the phonetic/phonological, the morpho-syntactic, the lexical, and the semantic/pragmatic.

[40] De Urbina, Jon Ortiz 1986
Advisor: Peter Cole

Some parameters in the grammar of Basque

In this study, I concentrate on some key aspects of Basque in order to lay out a basic description of this language from a GB perspective and to check relevant points of the theory against the evidence from an apparently highly marked isolate language.

The first chapter deals with ergativity, key syntactic structures which discriminate subjects from objects uniformly identify the ergative and the absolutive argument of intransitives as 'subjects'. Furthermore, building on Levin's (1983) analysis of izan (intransive) verbs as unaccusative predicates I show Basque to belong to the 'extended ergative' type. To capture this, a case assignment system is proposed which expresses at S-structure the generalization that all and only D-subjects are marked ergative and all and only D-objects are marked absolutive.

Chapter Two deals with the configurationality parameter. Despite free word order, I present some subject/object asymmetries which can be accounted for in a natural way only by positing a configurational structure where subject NP's c-command object NP's but not vice versa. Chapter Three considers the pro-drop parameter. I claim AGR in Basque includes three distinct features matrices with case specifications for Ergative, Absolutive and Dative. Following Huang's (1984) analysis of pro identification, I claim Basque to be an extended pro-drop language with both subject and object pro's. This is directly linked to the extended agreement pattern of Basque verbs. Some deviations from the expected case marking patterns in impersonal sentences follow directly from the case marking system proposed here assuming that 0-role cannot be assigned to certain non-canonical assignees.

Finally, in Chapter Four, an alternative to Horvath's (1981) FOCUS-parameter is presented which explains the syntax of question and focus formation in Basque. Rather than the existence of a FOCUS position for wh-phrases and foci distinct from SPEC, I claim the parameter to be the level at which both move to SPEC. Wh-operators move at S-structure in Basque and English, while focus operators move at S-structure in Basque, but at LF in English. The apparent pre-verbal position of these operators is claimed to follow from general independent processes like INFL-to-C movement.

[41] Dolezal, Fredric Thomas 1983
Advisor: Ladislav Zgusta

The lexicographical and lexicological procedures and methods of John Wilkins

This dissertation documents John Wilkins' contribution to the science of language analysis. I analyze his *Essay towards a Real Character and a Philosophical Language* (1668) concentrating on his lexicographic and lexicological achievements and the scientific apparatus that he uses to organize his classification schemes. I show how the Wilkins project must be considered a legitimate contribution to the practice of lexicography: with his friend William Lloyd he constructed a dictionary which anticipated later trends of lexicography and surpassed his contemporaries (e.g. general inclusion of ordinary words; multiple senses of single lexical items; fixed combinations — idioms, set collocations; systematic and impartial presentation of definitions). Though this dictionary has been largely ignored in the

scholarship of the history of lexicography, I demonstrate the need to reappraise the accepted tradition of English lexicography. I have compared entries from the dictionaries of Blount (1656), Kersey (1708), Bailey (1721), and Johnson (1755) with the alphabetical dictionary appended to the *Essay*. In the sections on the lexicological practice of Wilkins I document the semantic organization underlying the classification tables based on my analysis of the text which reveals that organization; these tables can be seen as an application of a structural analysis of the lexical items representing concepts Wilkins deemed as universal. The arrangement of the tables follows a binary and hierarchical formula. The most important aspect that I have found regarding the organization of the tables is Wilkins' use of what we would call distinctive features. In order to better appreciate the Wilkins system, I compare relevant portions of classificatory and semantic work done preceding and succeeding 1668 with the principles I have deduced from Wilkins' text. I look at works of classification (Comenius; Dornseiff; Hallig-von Wartburg; Roget), works of structural/componential analysis (Coseriu; Katz-Foder; Nida) and a design for a dictionary (Apresyan-Melcuk-Zolkovsky). I claim that Wilkins' work is organized by systematically (with lapses) applied principles. These principles, which I have deduced from my analysis of the Essay, anticipated much of what we regard as modern linguistic-semantic theory.

[42] Donaldson, Susan Kay 1984
Advisor: Yamuna Kachru

Some constraints of consideration on conversation: Interactions of politeness and relevance in Grice's second maxim of quantity

In his by now well-known paper 'Logic and conversation' philosopher of language, Paul Grice, establishes four maxims speakers follow in conversing: maxims of quantity, quality, relation, and manner. The maxim of quantity he divides into two parts, saying that conversational participants must give enough information to each other, but must not give too much. However, after once establishing this maxim, Grice immediately casts doubt on its validity, saying that its second part is adequately covered by the maxim of relation, which states that what one says should be relevant — that is, that any remark that would be considered overinformative would be discounted by its being irrelevant, anyway, thus eliminating the need for the second half of the maxim of quantity.

This dissertation, employing examples from both tape-recorded 'real' conversations and conversations from short stories and novels, argues that Grice's first intuitions were correct, namely, that the second half of the maxim of quantity is both valid and necessary. Speakers refrain, at times, from conveying to one another information that could be highly relevant to the material at hand, the thesis maintains, for reasons that stem in large part from consideration for one another. A lengthy review of the literature is included, as well as a chapter distinguishing conversation from other sorts of verbal interaction, and one on the nature of consideration and precedents from the literature on human interaction for consideration as a valid form of motivation. Transcripts of four 'real' conversations follow the text.

[43] Downing, Laura Jo 1990
Advisor: Charles W. Kisseberth

Problems in Jita Tonology

This thesis has two goals. First, it provides a detailed treatment of the tone system of Jita, an Eastern Bantu language spoken in Northwestern Tanzania. Secondly, it examines recent theoretical issues in Bantu tonology, especially the interaction of tone and accent.

Since the syllable is the TBU of Jita, the syllable structure conventions of Jita are discussed first as background to a discussion of the tone system. Using a moraic framework (Hayes 1989; Itô 1989), special attention is given to accounting for compensatory lengthening in Jita, which occurs both as the result of resyllabifying onsetless monomoraic syllables and before simplified geminate nasals and pre-nasalized consonants.

Next, the tone patterns of verbs, nouns and noun-modifier phrases are analyzed, and it is shown that much of the Jita tone system may be accounted for by non-metrical rules, i.e. rules which refer to the tonal properties of string adjacent syllables. Once it is determined which morphemes contribute a high tone to the derivation, OCP-motivated deletion rules apply to eliminate sequences of high tones on immediately adjacent syllables. Then all remaining high tones shift one syllable to the right.

However, some tone patterns in Jita are derived from tone rules which spread, reassociate or associate tones to syllables which are not string adjacent either to the trigger of the rule or to a domain edge. Following Kenstowicz (1989) and Sietsema (1989), I argue that these tone rules provide evidence for the interaction of tone and metrical prominence (accent) in Jita, since only metrical formulations of tone rules which target non string-adjacent elements conform to the Locality Principle (Archangeli & Pulleyblank 1986a,b; McCarthy & Prince 1986). It is further argued that in a theory in which accent is equivalent to metrical prominence, the Ordering Hypothesis (Goldsmith 1982; Sietsema 1989, etc.) may not be maintained. According to the Ordering Hypothesis, in languages in which tone and accent interact, all accentual rules apply in a block before all tonal rules. However, evidence from Zulu and Jita is presented which shows that non-metrical tone rules must precede assignment of accent in those languages.

[44] Dramé, Mallafe 1981
Advisor: Eyamba G. Bokamba

Aspects of Mandingo grammar

The present study attempts to provide a general description of the Grammar of Mandingo. Since the language has not been submitted to extensive linguistic investigation, the thesis will essentially be subdivided into three major parts: (1) a general background description of the morpho-tonology of the language; (2) a grammatical overview of simple sentences; and (3) an examination of the structure of complex sentences. In particular, Chapter II analyzes the morphology and the tonology of nouns, adjectives, verbs in an attempt to uncover general properties characteristic of all major Mandingo constituents. This chapter not only facilitates the reading of subsequent chapters, but it offers a description that is crucial for the understanding of the rest of the thesis.

Chapter III examines the syntax of simple sentences. In particular, three areas are covered in this chapter: (a) word order, (b) nominals such as nominal possession marking and nominalized sentences, and (c) movement transformations.

Chapter IV focuses on the syntax of complex sentences. Several questions are raised including (1) whether Mandingo conjunction fits within the Immediate Dominance/Non-immediated dominance dichotomy, proposed by Tai (1969) and Sanders & Tai (1972), (2) can a unitary account be found for Mandingo relative clause formation, that is, do the two relative clause types exhibited in this language share the same deep structure, (3) what types of complement clauses the language has, and what are their deep structures, (4) whether or not single rule can account for all Mandingo complement types, and (5) how can we account for the expletive pronoun 'it' which surfaces in some complement clauses. A tentative solution is finally proposed that permits the derivation of both relative and complement clauses by a single rule.

Chapter V concludes the thesis and discusses a number of theoretical issues raised in the previous chapters.

It is our hope that this study, although by no means exhaustive, will bring some insight into our knowledge of the structure of Mande languages, and in so doing increase our understanding of African languages and the nature of human languages in general.

[45] Du, Tsai-Chwun 1988
Advisor: Chin-Chuan Cheng

Tone and stress in Taiwanese

This study investigates two prosodic features, tone and stress, in Taiwanese, which is a Southern Min dialect. As far as tone is concerned, in addition to establishing the possible underlying tones of the dialect examined, we present our arguments for the analysis of the three types of tone sandhi in this dialect. We also propose a hierarchy binary tone feature system derived from Clements (1981) for a phonological characterization of these Taiwanese tones. Moreover, we examine the tone sandhi domain in this dialect and discover that the domain is rate-sensitive. There is a linear relationship between tone sandhi domain and speed of speech. When the speech speed decreases, the tone sandhi domain reduces, and vice versa.

Previous claims of stress in Taiwanese are based on impressionistic views. In the second part of this study, we conducted several acoustic and perceptual experiments to discern what the possible cues for the presence of stress in Taiwanese are. The results reveal that there were no identifiable acoustic cues that could be used to argue for the linguistic significance of stress in Taiwanese. Our experiments have proven that the previous impressionistic view is incorrect and there is no stress in Taiwanese as far as linguistic significance is concerned. Additionally, in the investigation of the intensity data, we establish the vowel-intrinsic amplitude difference in Taiwanese.

[46] Dudas, Karen Marie 1976
Advisor: Charles W. Kisseberth

The phonology and morphology of modern Javanese

As its title indicates, this dissertation will deal with the phonology and the morphology of Modern Javanese. However, this very general statement of subject matter may be somewhat misleading, and, thus, it seems that a certain amount of clarification is in order.

First of all, the language to be dealt with is indeed spoken in modern-day Java; however, the general label "Modern Javanese" covers a wide area and needs some qualification. Modern Javanese speakers make use of two major speech levels: Ngoko is used for informal every-day conversation, while Krama is the level used in business or polite conversation (there are also a number of sub-classes within each of these major levels). The two major levels differ from each other mainly in their inventories of lexical items, but also to some degree, in morphology. This dissertation will deal exclusively with the Ngoko or informal speech. Furthermore, discussion will be based on data collected in the course of two year's work with a single informant, Suharto Prawirokusumo, a graduate student at the University of Illinois. He is a native speaker of Javanese who grew up in the Surakarta area, where the dialect which is generally accepted as Standard Javanese is spoken.

A second area in which clarification is necessary involves the degrees to which the areas of phonology and morphology will be treated. Chapters 2 and 3 of this dissertation form an integrated whole in which a relatively detailed generative analysis of the phonology of the language will be built up, step by step. However, the remainder of the dissertation consists of four chapters which are only loosely related, insofar as all deal with some facet of morphology; no attempt will be made to build up a complete analysis of Javanese morphology. There are good reasons for this departure from the course followed with the phonology of the language. Not the least of these is the fact that, at this time, there is no satisfactory theoretical framework readily available for setting up any sort of complete morphological analysis; generative linguists are still at a fairly early stage in their investigation of the morphological aspects of language. At the same time, while a number of the Javanese morphological processes are so straightforward that their analysis would cause no difficulty, examination of each in turn would involve a great deal of repetition and would probably turn out to be of little value.

Finally, it should be pointed out that I do not claim to be presenting startling new data in this dissertation; nearly all Javanese constructions are to be found in the various Javanese grammars and dictionaries which are available. Nor can it be claimed that this is the first time any serious linguistic analysis of Javanese has been attempted; to make such a claim would do shameful disservice to a great deal of excellent work done in the past, most notable, that of E. M. Uhlenbeck. What I would claim for the present work, however, is that, by approaching the analysis of Javanese from a generative point of view, I have been able to produce a more insightful and natural analysis of the phonology of the language than any which has been offered in the past. Furthermore, it is to be hoped that, in the course of discussions contained in this dissertation, particularly those dealing with morphology, some contribution has been made toward furthering linguists' knowledge of the ways in which morphological processes may function in the grammars of

natural languages, and, in addition, how such processes may interact with others contained in grammars.

[47] Dunn, Andrea S. 1990
Advisor: Georgia M. Green

The pragmatics of seleted discourse markers in Swahili

The dissertation is a description of several discourse markers in Swahili in a pragmatic framework which assumes that speakers and hearers are rational agents whose behavior, including verbal behavior, is plan-based and goal-oriented. In this view, speech is coherent because the hearer can perceive the relation of utterances to the speaker's plan in the discourse. Discourse markers have a role in achieving coherent speech because their use guides the hearer in inferring how the speaker probably intends the utterances which they accompany to be part of her plan in the discourse. Each discourse marker has a basic sense which the speaker predicates of an utterance in the discourse. The hearer, believing that the speaker is cooperative, i.e. guided by the Cooperative Principle (Grice, 1975), infers what intention he must impute to the speaker in using the discourse marker that she used, when she used it, such that he may preserve the overall assumption of the speaker's cooperativeness. Thus, the speaker's use of a discourse marker requires the hearer to relate the utterance which it accompanies to his model of the speaker's plan in the discourse, thereby realizing its coherence.

Three discourse markers are discussed in detail, and several others more briefly. Chapter 2 discusses the use of sasa "now" to indicate that the speaker intends the utterance prefaced by sasa to achieve a sub-goal of a goal which she considers current in the discourse. Chapter 3 is the discussion of *basi* 'enough', both following and prefacing utterances. *Basi* indicates that the speaker intends the hearer to interpret the utterance which it follows as sufficient for the accomplishment of the speaker's super-ordinate goal. When *basi* is utterance-initial the speaker intends the hearer to understand that some other action is sufficient for the accomplishment of the sub-goal which she intends the *basi*-prefaced utterance to achieve. The use of the DM *maana* 'meaning', discussed in Chapter 4, indicates that the speaker intends the hearer to use the utterance which it prefaces as the basis for inferring the reason or cause for a preceding action, event or idea. Chapter 5 begins with a brief look at several other Swahili DMs (*haya* 'o.k.', *nanihii* 'whatchamacallit', *kumbe* 'lo and behold') suggesting that they are also a means for the speaker to indicate to the hearer how the utterances of which they are a part are related to her goals and plans in the discourse. The chapter concludes with a discussion of the implications of the view of DMs developed in the dissertation for issues in pragmatics, lexicography and foreign language pedagogy.

[48] Evans, Dorothy Eaton 1992
Advisor: Chin-Chuan Cheng

Computational implementation of Underspecification theories: Kiswahili example

The differences between Radical Underspecification theory (RUT) and Contrastive Underspecification theory (CUT) have been discussed in the literature (for example Archangeli 1988, Mester & Itô 1989, Dikken & Hulst 1988) comparing various aspects of these theories. This dissertation presents a discussion of a computational implementation of these competing theories. The

test case of the Kiswahili phoneme set was given as an example. The computer program, PUCA (Phonological Underspecification Computationally Assisted), implemented in HyperCard 2.0 on the Macintosh computer, provides the user of the program with the opportunity to enter any language's phoneme set and then experiment with different underspecifications of that set, altering the feature set as desired.

Chapter 1 provides an introduction to the dissertation. Chapter 2 covers the literature which deals with the phonologies of Kiswahili, Underspecification theories, concentrating on Radical and Contrastive, and computationally implemented phonological rule testers. Chapter 3 provides a description of the course of following the computer program through the process of underspecifying the Kiswahili phoneme set using the feature set suggested by Archangeli and Pulleyblank (1986). Chapter 4 continues the description of PUCA, discussing the overall program design and considers complement rule formation. Chapter 5 presents the results for both RUT and CUT along with a comparison to the results obtained by Treece (1990). Chapter 6 concludes with a discussion of PUCA's current limitations and the future directions for research and the development of the program.

[49] Farina, Donna Marie 1991
Advisor: Michael Kenstowicz

Palatalization and jers in Modern Russian phonlogy: An Underspecification approach

Every student of Russian phonology is aware of the importance of palatalization rules, and of the difficulties encountered in any attempt at describing the surfacing of jers: both structuralist and SPE-type analyses have tackled these problems in depth. In the following these topics are revisited, taking advantage of recent theoretical developments in phonology: nonlinear (syllable) theory, underspecification and lexical phonology. It is claimed: that some palatalized consonants are part of the underlying system of Russian and cannot be derived by rule, although most palatalized consonants are derived before front vowels; that there is no underlying /y/, but only high back nonround [y], a variant of /i/; that jers (i.e., "fleeting" vowels) are not underlying vowels but are underlying segments without a syllable nucleus; and that some (but not all) of the phonological rules involving jers are syllable-based. This new approach, it is argued, describes better than former ones the Russian phonological system as a whole, a system that contains rules which represent the continuum from synchronic (productive) to historical (morphologized).

The present work gives a revision of previous analyses of the phonological system of Russian, using the concept of underspecification in underlying representation (Archangeli (1984), Archangeli & Pulleyblank (1986), Kiparsky (1985), Pulleyblank (1983, 1986), and Sohn (1987)); a nonlinear, syllable-based view of phonology (Levin (1985)); and lexical phonology (Kiparsky (1982a, 1982b), Halle & Mohanan (1985), Lieber (1981, 1987), Mohanan (1982, 1986), Mohanan & Mohanan (1984), Pesetsky (1979), Pulleyblank (1986), and others). In particular, the role of the feature [-back] in the Russian consonant and vowel systems, the status of jers in the underlying system compared to that of vowels and consonants, and the behavior of jers in phonological rules are examined.

First, the widely accepted generative view that all palatalized consonants are derived by phonological rule is rejected in favor of the view that palatalized consonants are present underlyingly, but only in some contexts; contextual specification of the feature [-back] in underlying representation is used for these underlying palatalized consonants. Secondly, harkening back to structuralist analyses of Russian but using again the notion of contextual specification, high back /y/ is eliminated from the underlying vowel inventory, and [y] is considered an "allophone" of /I/.

Third, the assumption that jers are vowels is rejected, although they are certainly part of the underlying system: rather, following Levin (1985), they are equated structurally with glides in their lack of an underlying syllable nucleus. Lastly, the structural reinterpretation of jers leads to a reinterpretation of the functioning of jers in phonlogical rules: the previously postulated generative rules of Jer Lower and Jer Deletion are replaced by the single rule of Jer Vocalization, in which the surfacing of jers is conditioned by syllable structure. It is argued that the present approach is not merely translational (old rules are not just rewritten using a new theoretical apparatus), but makes different generalizations that allow for a better understanding of the role of jer and palatalization phenomena in the phonological system of Russian as a whole.

[50] Farwell, David Loring 1985
Advisor: Jerry Morgan

The interpretation of functional relations

This thesis deals with the representation of the functional relations such as agent, instrument, source and so on that are assigned to the various participants in a situation. It can be viewed as an investigation of that conceptual knowledge which defines what is and what is not a conceivable situation and how such knowledge is applied in the interpretation of natural language utterances.

The main body of the study concerns two interrelated topics. First, it contains a discussion of those functional relations that are the most likely to have universal application in the conceptual representation of situations. This discussion includes a concise definition of each of the functional relations proposed as well as a number of examples demonstrating the range of situations that it is intended to cover. Second, there is a description of the way in which this class of knowledge contributes to the interpretation of natural language utterances. The approach requires that a distinction be made between the literal interpretation of an utterance and its ultimate interpretation. Functional structure directly determines the former interpretation. However, the literal interpretation may be incomplete or ill-formed and, as a result, further processing on the basis of domain specific kinds of knowledge is required.

The general approach differs from others in that functional structure is viewed as but one of various levels or components of conceptual knowledge that affect both the form of linguistic expressions as well as the complexity of their associated conceptual representations. This enriched representation allows for directed inferencing with respect to particular domains of knowledge.

[51] Foster, James Maurice 1966
Advisor: Robert B. Lees

Some phonological rules of Modern Standard Ukrainian

Our purpose in this thesis is to provide an explicit and formal synchronic characterization of the sound system of Modern Standard (Literary) Ukrainian (MLU). We intend to supply a large part of the phonological component of the generative grammar of MLU.

The plan of presentation usually followed by earlier Ukrainian phonologists has been the following: 1) analysis of the underlying vowel system of MLU, 2) examination of the various vowel alternations, 3) analysis of the underlying consonantal system of MLU, and 4) examination of various consonantal alternations. The procedure of discussing vowel alternations and consonantal alternations separately has evidently been successful in the respect that the reader can follow this presentation more easily than one in which vowel and consonantal alternations are mixed. Since we intend to review critically the analyses of earlier phonologists, it would aid our presentation to follow closely the plan of these works. We will therefore adopt the traditional separation of vowel from consonantal alternations in this thesis.

Therefore, in Chapter II we will examine earlier accounts of the underlying vowel system of MLU, then examine several vowel alternations in order to test the adequacy of the traditional vowel system, and finally, make any innovations in the system deemed necessary on the basis of the vowel alternations studied. In Chapter III, we will continue analysis of the vowel alternations discussed in Chapter II, offer our analysis of the vowel alternations discussed in Chapter II, offer our analyses of these alternations, and then examine other vowel alternations found in MLU. In Chapter IV, we will review the underlying consonantal systems posited for MLU and then examine consonantal alternations in the attempt to determine if any of the underlying systems posited by earlier analysts are adequate. In Chapter V, we will discuss certain alternations not discussed in earlier chapters, and make any revisions in analysis which are necessary. In Chapter VI, we will discuss problems in analysis for which we have no satisfactory explanation, or for which a better analysis than ours seems likely. In Chapter VII, we will discuss certain historical-comparative matters based upon the rules which we have motivated in the preceding chapters.

[52] Foster, Joseph Frederick 1969
Advisor: Robert B. Lees

On some phonological rules of Turkish

In this dissertation a number of phonological phenomena of Osmanli Turkish will be hauled over the coals, as it were. In some cases we will formulate rules for processes for which this has not been done; in others we will argue for revisions of rules that have previously been formulated. We shall see in some cases that the recent revisions in phonological theory have very desirable results in compelling us to rewrite certain rules in such a way that the insight into the workings of the language is more adequately reflected than in the old formulations. In one or two cases, on the other hand, it may turn out that the theoretical revisions have less desirable consequences. In still other cases it will be seen that no theory of phonology

seems to reflect what is going on, and, where possible, we will suggest remedies. The main drift of the thesis can be summarized here rather briefly — we will show that the first vowels of words behave rather strangely with respect to a number of different rules — rules which at first glance would not seem to have much in common with each other. We shall claim that this phenomenon cries for explanation, and we shall hypothesize that an abstract stress rule should be postulated to account for the strange behavior mentioned, and finally, shall adduce some evidence to suggest that this abstract stress rule is not just an artifact of an earlier stage of the language but has also some psychological reality for modern Turks.

[53] Fox, Robert Paul 1968
Advisor: Braj B. Kachru

A transformational treatment of Indian English syntax

This study will attempt to show some of the areas of syntactic deviancy in Indian English. The corpus of this study was taken from the files of the Division of English as a Second Language at the University of Illinois. The compositions of two hundred Hindi speakers who took the test in the twelve year period from September 1954 to January 1966 were analyzed for syntactically deviant sentences which, when found, were put on index cards for further analysis. Each paper had been corrected by two members of the Division at the time of the test, so the judgements about deviancy were not just the writer's. The two hundred papers yielded almost five hundred syntactically deviant sentences for analysis. These sentences excluded obvious transfers from Hindi, such as the ordering of the adverbs of place and time, which is place-time in English and time-place in Hindi. Only those sentences whose deviancy could not be explained on the basis of obvious transfer make up the corpus.

The deviant sentences found in the corpus were analyzed following the system of transformational grammar proposed by Noam Chomsky in *Syntactic Structures* and refined in this 1965 book, *Aspects of the Theory of Syntax*. The purpose of the analysis and, in fact, the purpose of this study is to show that syntactic deviancy in the writing and probably in the speech of second language learners occurs on the transformational level and not on the phrase structure level. Speech is included with the writing here, even though the corpus does not include the spoken language, because it is closely associated with writing and second language learners tend to write what they say.

The second chapter of this study is devoted to an analysis of selected samples sentences from the corpus in the attempt to prove that syntactic deviancy is the result of the misapplication of obligatory or optional transformations of the non-application of an obligatory transformation. It is not the purpose of this study to propose new areas of transformational analysis, or to formulate transformational rules, though this is necessary to prove the thesis of this study from time to time. When new rules are proposed, they are formulated in a tentative manner, and to account specifically for the syntactic deviance under consideration.

The third chapter of this study is devoted to a contrastive analysis of certain selected structures to further show that the area of syntactic deviancy is on the transformational level and not on the phrase structure level. This section will necessarily be limited as the writer is not a fluent Hindi speaker.

Yamuna Kachru's *An Introduction to Hindi Syntax* will be used as the main source for Hindi syntax.

[54] Fukada, Atsushi 1987
Advisor: Georgia M. Green

Pragmatics and grammatical descriptions

The goal of the dissertation is to argue for the recent position that strictly distinguishes between grammar and pragmatics and discuss its consequences. By now it is clear that "raw" linguistic data contain many pragmatic elements, whether they are speech act properties, implicatures, beliefs and intentions of the speech participants, or what not. In analyzing such data linguists, in my view, are constantly faced with two problems: one is how to distinguish pragmatic matters from purely grammatical aspects of the data, and the other is what to do with such pragmatic elements. The second problem has to do with a proper conceptualization of the relationship between pragmatics and grammar. In particular, linguists must have a clear conception as to what the proper domain of each field is, and what the exact nature of the mode of their interaction is. This is, in my opinion, one of the outstandingly important empirical issues in current theoretical linguistics.

The first problem concerns ways of determining, in a given situation, what is pragmatic and what is grammatical. If one decides to take the position that denies the heterogeneous nature of raw linguistic data, this problem will not arise at all. I will argue, however, that such a position cannot be seriously maintained.

These are the two major issues this study addresses. The arguments in the body of the thesis will take the form of analyses or reanalyses of some problematic phenomena in Japanese and English where one's position on the above issues will have a serious effect on resulting grammatical descriptions of the phenomena. The highly controversial areas of Japanese grammar, i.e. passives and causatives, issues concerning honorifics and politeness in general, and an analysis of the English complement-taking verb *have* are some of the major descriptive issues taken up in this study. In each case, it will be shown that the position being argued for can provide solutions to the controversies and/or lead to what seems to be the optimal over-all descriptions.

[55] Gallagher, Mary 1969
Advisor: Robert B. Lees

Have and the perfect in English

The present study is a contribution to the analysis of the relationship between *have* and the copula in English. The thesis is that *have* appears on the surface as the result of a transformation. This transformation parallels passivization and operates on structures that would otherwise yield the copula. The analysis of several types of sentences containing *have* as Main Verb leads to a consideration of the periphrastic perfect. It also leads to the discovery that stative and non-stative uses of *have* are frequently distinguished by the presence of Tense in the deep structure in a different sentence from that containing *have*, or in the same sentence. It appears that no stative or Habitual is generated with Tense.

The analysis presented here is limited to reduplicating types (The table has a book on it), possessives (John has a book), and the periphrastic perfect (John has written his book). Even within these limitations, it has not been possible to avoid certain issues for which no resolutions can be proposed here.

[56] Garber, Anne Elizabeth 1987
Advisor: Charles W. Kisseberth

Tonal analysis of Senufo: Sucite dialect

Sucite, a Senufo language of the Gur language group, is spoken in southwestern Burkina Faso. Its tonal system of three level tones and several contour tones exhibits a considerable number of complex alternations.

This dissertation provides a descriptive analysis of the tonal alternations in Sucite. With the help of the autosegmental approach and Clements (1981) system of tone features, we propose a double tiered approach to tonal analysis in the attempt to analyze the behaviour of the various types of Mid tone found in the language.

The dissertation consists of an introduction and six chapters. In Chapter 1, we provide a brief description of the sound system, the morphology, and syntax of Sucite. Chapter 2 describes the tone and morphology of the verb and introduces the concept of two tiers for tonal analysis. The discussion of noun tone and morphology in Chapter 3 brings to light the need to re-examine the accepted universal of associating tones to segments from left to right. Chapter 4 is a description and analysis of the tonal behaviour of verbs and verbal particles when preceded by nominal and verbal elements of various tones. In Chapter 5, we examine how the nominal elements affect each other tonally within a noun phrase. Both tonal behaviour across word boundaries and tonal alternations within complex nouns are examined and analyzed with the use of the double-tiered approach. In particular, this chapter highlights the need for several different types of underlying representations for Mid tone. Chapter 6 discusses the tonal behaviour of the adverb phrase, question formation, and the noun class clitic, the latter of which poses special analytical problems. Finally, the ordering of the tonal rules presented in the thesis is discussed.

[57] Geis, Jonnie Elinor 1970
Advisor: Chin-Wu Kim

Some aspects of verb phrase adverbials in English

This thesis will attempt to provide a syntactic analysis according to a specific model of transformational-generative grammar of a subset of the constructions which traditional grammarians have grouped together under the term "adverb" or "adverbial." Although I will actually consider only a few kinds of adverbial constructions — locatives, instantive and frame adverbials, and durative, instrumental, and manner adverbials — it is hoped that some of the generalizations made about these adverbials will carry over to other types.

The model of transformational grammar which I will be working with considers both superficial adjectives and superficial adverbials to be represented in deep structure as predicates, in the same way that superficial verb phrases are represented. Other models of transformational grammar make claims about the deep-structure constituency of superficial adjectives and adverbials which are quite similar to the claims made about their structure by traditional grammar — that adjectives and adverbials are distinct

deep-structure categories fundamentally different from those elements that are verbs in surface structure. In these models, the semantic similarities among verbs, adjectives, and adverbs must be spelled out by interpretive semantic rules; on the other hand, the model which as been adopted here, in which the deep structure assigned to sentences are far more abstract than those assigned by models utilizing semantic interpretation rules, spells out these similarities in deep structure, specifically in the initial phrase marker which is the semantic representation of the sentence.

The abstract model, which I will refer to as "generative semantics," has been developed in recent word by Ross, Lakoff, McCawley and others. My intention is to show that the facts about the semantic content and syntactic behavior of adverbials can be handled more consistently and more insightfully within the model of generative semantics, where adverbials and adjectives, as well as other "modifying" elements, such as negatives and quantifiers, are represented in the deep-structure phrase marker as verbs. In the following chapters I will give an analysis of adverbial phrases showing that it is necessary to relate place, time, manner, and instrumental adverbials to verb phrases synchronically.

[58] Gerdemann, Dale 1991
Advisor: Erhard Hinrichs

Parsing and generation of Unification grammars

In this dissertation, it is shown that declarative, feature-based, unification grammars can be used for efficiently both parsing and generation. It is also shown that radically different algorithms are not needed for these two modes of processing. Given this similarity between parsing and generation, it will be easier to maintain consistency between input and output in interactive natural language interfaces. A Prolog implementation of the unification-based parser and DAG unifier is provided. The DAG unifier includes extension to handle disjunction and negation.

The parser presented in this thesis is based on Stuart Shieber's extensions of Earley's algorithm. This algorithm is further extended in order to incorporate traces and compound lexical items. Also, the algorithm is optimized by performing the subsumption test on restricted DAGs rather than on the full DAGs that are kept in the chart. Since the subsumption test can be very time consuming, this is a significant optimization, particularly for grammars with a considerable number of (nearly) left recursive rules. A grammar which handles quantifier scoping is presented as an example of such a grammar.

For generation, the algorithm is modified in order to optimize the use of both top-down and bottom-up information. Sufficient top-down information is ensured by modifying the restriction procedure so that semantic information is not lost. Sufficient bottom-up information is ensured by making the algorithm head-driven. Generation also requires that the chart be modified so that identical phrases are not generated at different string positions. It is shown how readjustments to the chart can be made whenever a duplicate phrase is predicted. The generator in this thesis does not perform equally well with all types of grammars. Grammars employing type raising may cause the generator to go into an unconstrained search. However, given the independently motivated principles of minimal type assignment and type raising only as needed, it is shown how such unconstrained searches can be avoided.

Finally, suggestions are made as to how unification grammars can be developed in order to handle difficult problems such as partially free word order, bound variables for semantic interpretation and resolving feature clashes in agreement.

[59] Habick, Timothy 1980
Advisor: Hans Henrich Hock

Sound change in Farmer City: A sociolinguistic study based on acoustic data

This dissertation reports the findings of a survey of the dialect of Farmer City, Illinois, involving spectrographic analysis of the recorded speech of a sample of 40 individuals from two opposing teenage peer groups and two older generations. A group of 7 speakers from three generations of a family from Somerset, Kentucky, is also included in the sample in order to help determine the influence of the Kentucky dialect on the speech of Farmer City. Migration patterns suggest that such influence could be strong.

The data collected in Farmer City and Somerset were analyzed spectrographically and used to construct a representation of the phonemic system of each speaker in the two-formant acoustic space. These charts serve as a basis for comparison from a sociolinguistic point of view and for the identification of a major systemic phonological change in progress. The facts concerning this change, that of the generalization of /uw/-fronting to other back vowels, are examined in light of the predictions made by several current theories of sound change. A basic orientation to sound change theory is provided in a chapter that surveys the history of the field from the Neogrammarians in the nineteenth century to the present-day lexical diffusionists.

The detailed data analyses and sociolinguistic correlations are preceded by chapters devoted to methodological considerations. The techniques used to identify and interview the 20 members of the two teenage peer groups are outlined in the first chapter on methodology. The social polarization between these groups, as illustrated in a sociometric diagram, is based on an attitudinal difference: one group (the 'rednecks') is oriented towards academics and sports; the other (the 'burnouts') is known for a marked disinterest in most aspects of the school as well as for an alleged involvement with drugs. The unambiguous nature of this social division is supported by an appendix of interviews, in which members of both groups discuss their feelings concerning the social structure of the school. As expected, these social distinctions are reflected in differences in the speakers' phonological systems and in their participation in ongoing sound changes.

After a review of the procedures following in recording, analyzing, and charting the data, the issue of the acoustic variability of phonemic systems is considered in detail. It is concluded that the size and shape of the phonemic system in two-formant acoustic space varies from speaker to speaker as a function of fundamental frequency and social forces (both determining articulatory setting) as well as of the invariant characteristics of the vocal tract. An understanding of the causes and consequences of acoustic variability is crucial when spectrographic data are to be used for dialectological research.

Aspects of acoustic variability are reconsidered in an additional chapter in which the relationship between articulatory setting and sound change is explored. A consideration of the socially-determined articulatory setting

characteristic of each peer group proved helpful in understanding at least one aspect of their phonemic systems.

The most important ongoing sound change observed in Farmer City has provided an example of how a dialect in the path of a sound change may incorporate that change into its phonological system in novel ways. /uw/-fronting is a characteristic of many Southern and South Midland dialects, but the younger generations have generalized this feature to several other back vowels. This has given their vocalic systems a unique collapsed appearance that is found neither in the older generations of Farmer City nor in the Kentucky speakers.

Finally, it is noted that the sound changes documented in Farmer City exhibits the rule-governed behavior with respect to conditioning environments that is predicted by the variable rule theory of William Labov; no evidence for random decomposition of word classes or 'lexical diffusion' was observed.

[60] Hackman, Geoffrey 1976
Advisor: Yamuna Kachru

An integrated analysis of the Hindi tense and aspect system

The genesis of this dissertation was a proposed attempt to isolate and codify the presuppositions associated with various forms in the tense and aspect system of Hindi. The articles which gave impetus to this proposal are cited briefly in Chapter II (e.g. Fillmore 1971, Lakoff 1971, etc.). Having made the decision the next step was to find a thorough analysis of the system of tense and aspect with a principled inventory of the forms contained therein. The search for such an analysis was long and, for the most part, fruitless. At the same time, dissertations and articles were appearing which questioned the nature, representation, and viability of the notion 'presupposition' (e.g. Morgan 1973, Rosenberg 1975). As a result of these influences, the analysis presented below was made to fill the vacuum.

In this dissertation certain inadequacies of both traditional and modern treatments of the Hindi tense and aspect system are cited. Several works dealing with English tense are reviewed and compared. Two descriptive models are developed to analyze the tense and aspect systems of Hindi. The first isolates elements of form and units of meaning and shows that meaning form correspondences are quite systematic. The second uses a time-line device to illustrate graphically the meanings associated with the three aspects of the Hindi verb — imperfect, perfect, and progressive.

The question of tense and aspect has generated a tremendous volume of response in linguistic literature. Only a very limited number of articles dealing with the complexities of time reference have been reviewed here. Chapter II treats several of these, ranging from a descriptive account of the chronological system of the English verb (Diver 1963) to the generative-semantic account of McCawley (1971).

The third chapter presents an overview of the tense and aspect system of Hindi. The descriptive method used by Diver (1963) is modified and applied to Hindi data in Chapter IV. In Chapter V the account of tense presented in Reichenbach (1966) is discussed. This chapter is primarily concerned with tense usage in simple sentences but deals with complex sentences in those cases where a given configuration can only be so expressed. Chapter VI

extends the notion of transcription further to account for all complex sentence tense behavior. The important claims made and their basis are presented in summary in Chapter VII. Suggestions for further research are presented here as well.

[61] Haddad, Ghassan F. 1984
Advisor: Michael Kenstowicz

Problems and issues in the phonology of Lebanese Arabic

This study is both exploratory and analytic in nature. In other words, it attempts to discuss issues in the phonology of LA, which though distinct from each other, share the common factor of being rarely dealt with in the literature. The thesis is divided into four chapters.

Chapter I discusses three of the most productive rules in the language: Stress Assignment, Syncope and Epenthesis. It compares a segmental and a metrical analysis of these rules, and discusses their ordering. In addition, it deals with various related issues of general interest to the linguist. Among these is the question of "sonority", its role in the organization of the syllable, and its interaction with Epenthesis and Assimilation.

Chapter II provides the first attempt at analyzing the verbal system of a modern Arabic dialect within the framework of McCarthy's (1979) Prosodic Theory. Apart from this goal, the present chapter investigates and confirms the tri-directional affinity among vowel melody, transitivity, and the perfect-imperfect correspondences. For the purposes of this chapter, the writer has compiled a complete list of all the available strong and defective triradical verbs.

Chapter III presents the first attempt at exploring the application of rules on the phrasal level in Arabic. It is divided into three sections. Dealing with the word-level, section 3.1. gives a detailed analysis of the anomalous behavior of the feminine suffix in nouns, adjectives, and perfect verbs. Arguments are presented to show that the underlying structure of this suffix is /-it/. It is concluded that in order to understand the behavior of this morpheme, it is necessary to retrieve grammatical information about the stem of the word.

The same conclusion is reached in the next two sections, both of which deal with the phrasal level. In section 3.2. three types of phrases shared by most Lebanese speakers are discussed. These are feminine constructs, prepositional phrases, and definitive relative clauses. In section 3.3. data from eight Lebanese informants are analyzed, and it is shown that in spite of the variability they display, each pattern is governed by a natural and well-constructed grammar. This variability is shown not to be of the sociolinguistic type, and the proposal is made that it may be the outcome of two cognitive styles. The first is related to "tolerance of ambiguity", and the second to "field dependence-independence".

Chapter IV discusses the issue of the neutralization of contrast between /i/ and /u/ in LA. An attempt is made to study the phonetic distribution of these two vowels, and the proposal is made that all instances of [u] are derived from /i/ by rule. This thereby reduces the phonemic inventory of the vowel system in the language into five vowels: /i/, /a/, /ii/, and /uu/.

[62] Hajati, Abdul-Khalil 1977
Advisor: Yamuna Kachru

ke-Constructions in Persian: Descriptive and theoretical aspects

In view of the last two decades of developments in linguistic theory, particularly in the United States, it might perhaps seem out of place to assert that this project assumes a generative transformational framework. But ever since its inception in 1957 (Chomsky, 1957), transformational theory has witnessed so many revisions, expansions, extensions, and bifurcations that it makes the choice of any one proposal over the other competing theories very difficult, if not impossible. This difficulty is simply due to the fact that any preference will inevitably raise a great deal of controversial issues requiring empirical justifications which go far beyond the scope of this study.

To evade the controversial issues and make the work feasible, therefore, I have arbitrarily decided to start out with Chomsky (1965) as a general frame of reference along with some other proposals for its expansion. Some of the most important concomitant assumptions of this theoretical framework which underlie this study are very briefly the following.

A. Every sentence of a language has a surface structure and a deep structure, both of which may be represented by node-labelled trees (Green, 1974).

B. Sentences with different meanings have different deep structures.

C. A grammar has four systems of rules:
   i) A system of Phrase Structure (PS) Rules, which generate possible deep structures;
   ii) A system of Lexical Insertion (LI) Rules, which map lexical materials onto the outputs of PS Rules, deriving "deep structures" of sentences;
   iii) A system of Transformational (T) Rules, which map "deep structures," through intermediate stages, onto their "surface syntactic structures;" and
   iv) A system of Phonological (P) Rules, which relate the surface syntactic structures, through intermediate stages, onto their "surface phonetic representations."

D. A grammar has a Lexicon that supplies all the idiosyncratic information regarding the lexical items in terms of their phonetic phonological, syntactic, and semantic properties.

E. In addition to PS-Rules, LI-Rules, T-Rules, and P-Rules, defining well-formedness conditions on successive stages of derivations, linguistic theory also requires constraints on deep structures (Perlmutter, 1971), constraints on derivations (Ross, 1967; Postal, 1971; G. Lakoff, 1969, 1970b, 1971; etc.), and constraints on surface structures (Ross, 1967; Perlmutter, 1971).

F. And finally linguistic theory must ultimately aim for explanatory adequacy, i.e., it must provide a principled basis, independent of any particular language, for the selection of descriptively adequate grammar of each language (Chomsky, 1964, 1965).

In light of these theoretical assumptions, I propose to investigate some descriptive and theoretical aspects of Modern Standard Persian syntax.

[63] Hale, Everett Austin 1966
Advisor: Robert B. Lees

Verbal Complementation in Züritütsch

The problem addressed here is that of giving a well motivated, coherent, and explicit account of the syntactic capabilities of the speakers of Züritütsch to construct and interpret sentences containing verbal complements. Verbal complements are viewed as those nonadverbial sentential structures in terms of which verbs are subcategorized. The topic approached in terms of the structure of Züritütsch itself and not primarily as a topic in the contrastive analysis of Züritütsch and standard German. The topic is treated in two chapters, Chapter II and Chapter III. Chapter II is concerned with the underlying structures of the base which must be posited in order to explain the relevant capabilities of Züritütsch speakers. Chapter III is concerned with the transformations required for the mapping of these base structures onto their corresponding surface structures. The base phrase markers are required as input by the semantic component. The phrase markers of the surface structure are required as input by the phonological component. Neither of these interpretive components will be dealt with in this study.

Inasmuch as the writer is not himself a fluent speaker of Züritütsch, all of the evidence to be presented here concerning the language was gained through work with an informant. Examples taken from written sources were checked with an informant before being presented as grammatical Züritütsch. The principal informant was the writer's wife, Margrit Kuster Hale.

[64] Halpern, Richard Neil 1980
Advisor: Frederic K. Lehman

An investigation of "John is easy to please"

In this thesis, I defend Noam Chomsky's transformational account of "John is easy to please". Then, in light of an analysis of "John is an easy man to please", based on the infinitival relative, I propose a speculative historical hypothesis concerning the origins of "John is easy to please". In addition, I attempt to explain the lexical government of object-shift and to account for the synchronic occurrence of such sentences as "John is too smart to fool" and "John is stupid enough to be fooled". In general, the emphasis is placed on attempting to account for the occurrence of complex syntax, in particular, the permuted structure found in "John is easy to please".

[65] Hamid, Abdel Halim M. 1984
Advisor: Michael Kenstowicz

A descriptive analysis of Sudanese Colloquial Arabic phonology

This thesis discusses in some detail the phonology of Sudanese Colloquial Arabic. It attempts for the first time to present a thoroughly precise descriptive analysis to the most prominent phenomena of the phonology of this language under the recently developed approaches in the field of phonological theory and shows the adequacy of these approaches in generating the phonology of this particular dialect of Arabic.

It is concluded that besides utilizing the technical devices available under the traditional approaches, the devices introduced by the recently developed approaches can be utilized in a very efficient way.

This thesis consists of an introduction and six chapters. In the introduction the main features of the study as well as its theoretical framework are set forth.

Chapter 1 is devoted to some observations on the historical development that has some significant consequences to the synchronic analysis which is the major concern of the study.

Chapter 2 deals with stress assignment in Sudanese Colloquial Arabic within two different perspectives; segmental and metrical and shows the merits of both.

Chapter 3 discusses the inflectional phonology in great detail and states a number of phonological rules to account for different processes arising from the juxtaposition of morphemes.

Chapter 4 discusses syncope as a phrasal rule and shows its operation across boundaries as well its nature as a rule sensitive to certain syntactic structures.

Chapter 5 deals with the assimilation processes within the word and across word boundaries, indicating that these processes represent one of the characteristics of Sudanese Colloquial Arabic and belong to the post-lexical portion of the grammar.

Chapter 6 discusses the morphology of the verb in Sudanese Colloquial Arabic showing the way whereby different verbal forms are derived and accounts for the morphophonological processes involved in that derivation.

[66] Hatasa, Yukiko Abe 1991
Advisor: Howard Maclay

Transfer of the knowledge of Chinese characters to Japanese

Unlike many European languages, Japanese orthographic system is complex, consisting of three types of scripts used to serve different functions in a text. In particular, a great deal of efforts and time are spent on teaching kanji (Chinese characters) to both native and non-native speakers of Japanese. For instance, average Japanese children spend more than ten years learning kanji to achieve functional literacy (Ishii, 1967). Since kanji are used for content words in Japanese, many researchers and educators believe that knowing more kanji entails better comprehension, and that the native speakers of Chinese should be able to read Japanese better than those whose native language do not have Chinese characters (Ezoe, 1985; Takebe, 1988).

This dissertation examined the validity of such belief and investigated the way in which knowledge of Chinese characters is transferred to processing Japanese. A series of tests of kanji, grammar and reading in Japanese which did or did not contain kanji were given to native speakers of Chinese and those of English. The results showed that Chinese speakers transferred their knowledge of kanji significantly in the tests of kanji and reading but not in the tests of grammar. Also, the influence of the native language was not a very strong factor in the reading tests. Furthermore, the results suggested that the contribution of the knowledge of kanji might vary depending on proficiency.

[67] Hendricks, William Oliver 1965
Advisor: Howard Maclay

Linguistics and the structural analysis of literary texts

This is a programmatic study in the admittedly controversial area of the application of linguistics to the analysis of literary texts. The study is divided into two parts: Part I, the major part, consists of a review and critical evaluation of past work in this area. The aim is to explore systematically an area that is primarily noted for its lack of system, or well defined boundaries and agreed upon goals and limitations. Part II represents an attempt to integrate and build upon this work in order to achieve an adequate means of analyzing short stories. Since prose fiction has been relatively neglected by linguists interested in literary analysis, the analytic technique proposed in Part II has certain limited claims to novelty. The technique is illustrated by being applied to William Faulkner's "A Rose for Emily."

The review in Part I is by no means an exhaustive treatment of linguistic approaches to literary analysis. This would be a monumental task since this general topic subsumes a wide range of activities. The attempt is made, however, to present a rather complete review of work in one specific, well-defined area. The essential purpose of this introductory chapter is to delimit exactly the specific topic of this study.

The technique for analyzing short stories proposed in Part II of this study involves a radical extension of linguistics in certain respects. Here linguistics is utilized as a model; extension is thus a matter of reasoning by analogy. The position taken is in essential congruence with A. A. Hill's who has written, "My position is that linguistic analysis forms a good analog for literary analysis, that many of the problems of both types of activity are similar, and that it would be as short-sighted to deny the similarities as it would to deny the inevitable differences."

[68] Hermon, Gabriella 1981
Advisor: Georgia M. Green

Non-nominative subject constructions in the Government and Binding framework

This study is an investigation of the principles required to account for the behavior of non-nominative subjects in the Government and Binding framework, a version of the Extended Standard Theory. Non-nominative subjects are NPs which are not case marked with nominative case and which do not trigger subject verb agreement. These NPs, however, may share certain syntactic properties with nominative subjects. It is shown that in the Government and Binding framework the principles and theories which distinguish between subjects and non-subjects require an analysis in which the non-nominatives are subjects in certain components and non-subjects in others. In Imbabura Quechua, the language analyzed in greatest detail in this thesis, non-nominative desideratives are treated as subjects by the binding principles, the theory of control and the ECP. In other languages, such as Huanca Quechua, non-nominatives are treated as subjects only by the ECP, but not by the binding principles or by the theory of control.

An analysis is suggested to account for this variability. It is proposed that these nominals be generated as D-structure objects and reanalyzed (by Move-alpha) as subjects on the right-hand side of the grammar. This analysis is

generalized to other languages, such as Kannada, Modern Hebrew and Italian. A variety of changes in the framework are proposed. The division of the right-hand side of the grammar into two components, a binding component and an LF component is motivated.

[69] Houston, John R. 1978
Advisor: Howard Maclay

The acquisition of English restrictive relative clauses by native speakers of Arabic

Keenan and Comrie (1972) described a hierarchy of relative clause types observed in natural languages. These were: subject, direct object, indirect object, object of a preposition, possessor NP, and object of a comparative particle. If a language allows relativization at a given point on the hierarchy, it also allows relativization on all preceding positions on the hierarchy. English and Arabic allow relativization on all positions of the hierarchy.

Multiple choice tests of comprehension of English restrictive relative clauses were given to two groups from the Royal Saudi Air Force. The sentences that were tested had the matrix NP in subject and object position and the subordinated NP in the positions on the hierarchy. Fourteen sentence types were tested.

Three hypotheses examined by Sheldon (1974) were examined to determine their importance for second language learners: interruption, word order, and parallel function. The sentence types were examined to discover which types posed problems for the subjects. Errors were accounted for by the subjects' use of various strategies for processing the sentences.

For relative clause sentences as a whole, interruption, word order, and parallel function were significant factors. Possessive relative sentences were significantly harder to process than non-possessives. Within the set of possessive sentences, only word order was significant.

Strategies of Adjacency, First NP Subject were observed. Other strategies and alternatives are presented to account for systemic errors.

A non-linear hierarchy of difficulty is proposed based on sentence type and what the subjects were asked to identify. The hierarchy proceeds from easy to hard:

1. Identify Matrix Object
2. Identify Subordinate Subject
   a. one NP before verb
   b. two NPs before verb
   c. more than two NPs before verb
      (1) non-possessive
      (2) possessive
3. Identify Matrix Subject
   a. non-interrupted
   b. interrupted
      (1) non-possessive
      (2) possessive
4. Identify Subordinate Object
   a. maintained word order
   b. rearranged word order

(1) non-possessive
(2) possessive

[70] Irshied, Omar Musleh 1984
Advisor: Michael Kenstowicz

The phonology of Arabic: Bani Hassan — A Bedouin Jordanian dialect

This thesis is devoted to the study of selective phonological aspects of Arabic phonology in general and Bani Hassan dialect in particular. Basically, an analysis of the phonological rules that are most often presented in general analysis of Arabic phonology, both on the lexical level and on the phrasal level is given, while we attempt to investigate the important issues that characterize the Bedouin dialects in general and Bani Hassan Arabic in particular.

The following notes will give a general overview of the organization of this study. Chapter 1 presents the basic aspects of the language. Chapter 2 examines the lexical rules that apply inside the lexicon through the course of word formation. It has been shown that most of these rules are cyclic, structure preserving and may be sensitive to the properties of individual words. Chapter 3 deals with the relatively more complicated phonology that operates at the phrasal level. The rules that are discussed in this chapter apply across word boundaries; they may introduce new structures ad segments not found in the basic inventory of segments and finally, they should be without lexical exceptions.

[71] Jake, Janice Lynn 1983
Advisor: Charles W. Kisseberth

Grammatical relations in Imbabura Quechua

This thesis examines certain aspects of the syntactic structure of Imbabura Quechua within the framework of relational grammar. Specifically, it examines the grammatical relations borne by nominals in the following syntactic constructions: passive, dative movement, ascensions out of sentential subjects and sentential objects, subject inversion, direct object advancement in unaccusative clauses, and causative clause union. The analysis of these constructions presented in this study provides support for the theory of relational grammar and for the more central of the universal laws of relational grammar.

The analysis of passive and ascensions out of sentential subjects and sentential objects provides support for the use of constrained variables to represent the candidate relation of relational rules. The examination of ascensions in Imbabura Quechua also provides support for the claim that certain initially intransitive clauses have direct objects but no subjects (Perlmutter 1978).

An examination of the inversion construction in Imbabura Quechua provides evidence for the inversion of subject nominals to indirect object, although an inverted subject always occurs as a direct object. The interaction of inversion and other rules shows that in Imbabura Quechua a nominal can passivize in an inversion clause. This is a counter-example to the claim in Perlmutter (1978) that inversion clauses do not allow passive and always involve the advancement of a direct object to subject in an unaccusative stratum.

The analysis of causative clause union constructions in Imbabura Quechua presented in this thesis suggests that the principles determining the syntactic structure of causative clause union constructions are not entirely understood.

[72] Johnson, David Edward 1974
Advisor: Jerry Morgan

Toward a theory of relationally-based grammar

This dissertation attempts to justify incorporating grammatical relations as primitives into linguistic theory and to motivate the development of a relationally-based theory, that is, a theory of grammar in which a significant number of rules and constraints are based directly on the notion of grammatical relations such as 'subject-of' and 'direct-object-of.' Theories are, as much as anything else, 'tools for investigation and communication' and hence must be judged in part by the questions they lead one to ask. To the extent that the observations and questions brought out in this study are deemed interesting and valuable, this approach will be justified in at least this one respect. At this stage of our metalinguistic knowledge, little more can be asked of any linguistic theory — after all, the major contribution of transformational grammar could well be judged in the future to be that it inspired new questions and observations — questions and observations that must be answered and explained by some totally unknown theory of language still over the horizon. This thesis, then, can be looked upon as an effort to free oneself from the conventional attitude regarding rules and grammatical relations — in the hope of uncovering new facts, raising new questions, and constructing valid generalizations that will lead, ultimately, to a deeper understanding of the nature of human language.

This basic plan of the work is as follows. Chapter II is an evaluation of the standard transformational approaches to defining grammatical relations. Chapter III develops certain definitions and notation that will prove useful throughout the rest of the study. In addition, as already mentioned, a brief outline of a possible theory of relationally-based grammar is given. The remaining two chapters are, for the most part, independent of the theory sketched in Chapter III. The focus of Chapter IV is on evidence that supports the contention that grammatical relations are central to the formulation and application or rules at other than deep-structure levels and that a universal characterization of grammatical relations is needed at relatively superficial levels of the grammar. This chapter also introduces certain complications, problems and conjectures concerning the phenomenon of 'Ergativity' — problems and complications that must be handled by any adequate linguistic theory but are not by any of the existing ones. Chapter V discusses a number of topics including the relationship of cyclicity, globality and other parameters to the property of the relation-changingness of a rule. Relation-changing rules are classified in various ways in a search for meaningful regularities. The final chapter is a brief summary and conclusion.

[73] **Ka, Omar** 1988
Advisor: Charles W. Kisseberth

Wolof phonology and morphology: A non-linear approach

The object of this study is Wolof, an African language belonging to the Northern West Atlantic branch of the Niger-Congo family. Wolof is spoken primarily in Senegambia, where it has become a lingua franca. The purpose of the thesis is to provide an analysis of the phonology and morphology of the language using the non-linear framework. In Wolof, such notions as vowel length, complex segments, permissible syllable, and phonological phrase play a significant role in the description of many aspects of Wolof phonology (syllable structure, gemination and degemination, prenasalization, vowel coalescence, vowel insertion, glide insertion, vowel harmony reduplication processes, and stress assignment). Nonlinear representation of phonological structure provide a way to account in a satisfactory fashion for these processes.

The thesis is divided into six chapters. The first chapter sets the stage by giving an overall presentation of Wolof phonology and morphology and by sketching the main characteristics of the non-linear framework. Chapter 2 is devoted to syllable structure, in particular the syllabification principles of the language, the levels of assignment, and the treatment of complex segments such as long vowels, geminates, and prenasalized consonants. Chapter 3 gives an exhaustive account of vowel harmony in Wolof, emphasizing the existence of neutral and opaque vowels, and describing vowel harmony as an external sandhi rule.

Chapter 4 analyzes other phonological rules such as gemination, degemination, vowel coalescence, vowel and glide insertions, and their relationship with syllable structure. Chapter 5 accounts for reduplication in non-linear terms, positing the existence of a morpheme template and describing the relations between reduplication and other word formation processes such as suffixation and nasal prefixation. The sixth and final chapter discusses stress assignment using a metrical approach and the different parameters proposed by Hayes (1981).

[74] **Kamwangamalu, Nkonko** 1989
Advisor: Braj B. Kachru

Code-mixing across languages: Structure, functions, and constraints

In recent years researchers have investigated code-mixing from three perspectives: psycholinguistic, syntactic, and functional. This study is concerned mainly with the functional use and syntactic structure of code-mixing (CM) across cultures and languages. From a functional point of view, the study attempts to determine why bilingual speakers often engage in CM when they interact with other bilinguals with whom they share the same linguistic repertoire. From a syntactic point of view the study attempts to determine whether there are universal constraints on CM. And, if there are, why it is that the proposed universal constraints often prove vulnerable in light of new data.

In an attempt to address these issues the study provides first a cross-cultural and cross-linguistic typology of CM based on the three perspectives mentioned, with a focus on the functional and syntactic perspectives. Functionally, it is found that bilingual speakers mix the languages available to

them for various communicative purposes, such as marking social class identity, education, and modernization. The use of CM to achieve functions such as these is determined by the cline of bilinguality achieved by the speaker, and by the number of variables in the context of situation, e.g. the topic, the setting and/or the participants. These conclusions are further supported by a case study of Lingala-French CM. The case study shows that like bilingual speakers in other bilingual communities, functionally Lingala-French code-mixers resort to CM in order to achieve functions such as those mentioned above. Based on these conclusions it is argued that the use of CM in bilingual communities should not be interpreted as symptomatic of linguistic incompetence in one or other of the bilingual's languages, since bilinguals are observed to resort to CM even if the message or information they convey through CM can also be expressed in one language only.

Syntactically, an attempt is made to explain why the proposed constraint on CM are often violated in light of new data. It is found that the data on which most of those constraints are based represent triggered rather than natural or self-occurring code-mixed speech. It is suggested that current methodologies that consist of triggering CM in the speech of bilingual speakers be abandoned, and that constraints be based on code-mixed data drawn from spontaneous conversation between bilinguals in natural settings. In order to determine the rules that govern CM a distinction is made between host language and guest language. It is proposed that CM is governed by a Host Code/Guest Code Principle. This principle says that in a code-mixed discourse involving languages L1 and L2, where L1 is the host code and L2 the guest code, the morphosyntactic rules of L2 must conform to the morphosyntactic rules of L1, the language of the discourse.

[75] Kang, Seok Keun 1992
Advisor: Chin-Wu Kim

A moraic study of some phonological phenomena in English and Korean

The purpose of the study is to present a more satisfactory account of some phonological phenomena in English and Korean by employing the framework of moraic phonology.

In Chapter 1, I review CV phonology and present the representations and the general principles of moraic phonology. I also provide the moraic and syllabic structures in English and Korean.

Chapter 2 discusses the formal representation of ambisyllabic consonants in terms of moraic theory. I claim that the notion of ambisyllabicity capturing the shared feature of a consonant has a real intuitive appeal and that ambisyllabicity and gemination are not in complementary distribution among languages; i.e., they should be given different representations. I also show that the moraic representation of ambisyllabicity makes some better predictions than the CV representation of it (e.g., Clements and Keyser 1983). With the notion of ambisyllabicity, I reexamine English aspiration and flapping.

In Chapter 3, I deal with various syllable weight-related issues. First, I claim that there are two types of glide formation in Korean; i.e., one that is optional triggers CL, and the other that is obligatory fails to induce CL. Reanalyzing the /ɨ/-deletion processes of Korean, I show that CL in Korean is a mirror image rule. I also provide a reanalysis of the /l/-irregular predicates

in Korean, and assert that not /l/-deletion but Intersonorant /i/-deletion induces CL. The pattern here is 'VCV → V:C0'. I consider a case of this sort from Middle English. In addition, I discuss some other consonant deletion rules which happen to be related to CL.

Chapter 4 deals with interaction between phonological rules and conditions. First, I reanalyze the so-called CC Shortening in English, claiming that shortening here is the automatic disconnection, due to Structure Preservation, of part of the long vowel, which occurs with the incorporation of the consonant into the syllable. Second, I show that consonant cluster simplification in Korean is directly related to the moraic structure and the 'morified' syllabification process. Finally, I claim that no explicit orderings among some phonological rules need be specified in the grammar, for they are predictable by universal and language-particular principles.

In Chapter 5, I provide a brief overview of the thesis and discuss some of the implication for linguistic theory.

[76] Kang, Yongsoon 1992
Advisor: Chin-Wu Kim

Phonology of consonant-vowel interaction: With special reference to Korean and Dependency Phonology

This dissertation is a search for a more satisfactory explanation for various consonant-vowel interaction phenomena. The theoretical framework best suited for this purpose is judged to be Dependency Phonology (Anderson & Ewen 1987.) Dependency Phonology assumes that a dependency relation holds in every module of grammar, i.e. from the internal structure of a segment to a syntactic structure. This idea is desirable by virtue of its simplicity, consistency, and versatility.

In the first chapter, two current representational systems, i.e. Underspecification and Feature Geometry, are reviewed and it is shown that these frameworks are not quite adequate in explaining the consonant-vowel interaction phenomena.

In Chapter 2, I present some basic principles and representations of DP. In order to improve the representation of phonological rules, I adopt a theory of underspecification and a convention of spreading. The former is done by removing the articulatory gesture and the latter, by spreading components instead of features. In the final section, a syllable structure of Korean in the DP framework is suggested.

In Chapter 3, four phonological processes which involve consonant-vowel interaction are explored. They are Palatalization, Labialization, Umlaut, and Consonant and Vowel Harmony. It is shown that the DP model is better than Feature Geometry in dealing with these phenomena since in DP representations, consonant and vowels share common components which are suitable for representing consonant-vowel interaction phenomena.

In Chapter 4, I deal with Korean word structure and some phonological rules which are sensitive to a dependency relation between morphemes. I examine in detail Intervocalic Voicing and Tensification. It turns out that Tensification is more specific in the sense that if a certain phonological or morphological condition is met then it applies, and if the condition is not met when voicing takes place. Tensification in relative clause is also closely

examined and it is claimed that the seemingly same surface structure [V+±1N] has two different underlying structures: that of a relative clause and a sub-compound. Only in the latter case, Tensification takes place. Finally, Causative and Passive construction and allomorphy are investigated. It is claimed that it has the mutual-governed structure and /-ki/ is the underlying form of the variant.

Finally, Chapter 5 is a concluding chapter that summarizes and discusses some theoretical implications of this study.

[77] Kapanga, Mwamba Tshishiku 1991
Advisor: Eyamba G. Bokamba

Variation and change in language: A case study of Shaba Swahili

Swahili has generally been perceived as a homogenous entity whose norms are reflected in the variety spoken on the coast of East Africa. Any deviations from these norms are perceived as trademark of colloquialism, corruption, deterioration and/or sub-standardness. In the Zairian province of Shaba, the variety of Swahili used is characterized by a multiplicity of deviations at all grammatical levels. This being the case, this variety, commonly known as Shaba Swahili (ShS), has been considered by many as a colloquial, corrupt, deteriorated, and sub-standard or pidgin variety of East African Swahili (EAS).

This dissertation provides an analysis of ShS, one of the very few non-western languages classified as pidgin/creole (P/C). It shows that although ShS fulfills some of the criteria used for the classification of P/C (i.e. structural simplification and historical origin associated with slavery, trade, etc.), it is not a P/C. It will be shown through the analysis of ShS that structural simplification is not a property of P/C only. Rather it is the property of all languages found in contact situations; namely, link languages, koinés, foreigner talk, P/C, immigrant, and institutionalized varieties. Thus, all the processes of language contact such as linguistic convergence, structural simplification, interference, interlanguage, linguistic nationalism, superstratum association, language attitudes, etc. will be evaluated to sort out a new set of criteria for language categorization in contact situations.

This study attempts to demonstrate that ShS is a "meaning system" that reflects the linguistic and socio-cultural context proper to new context of use. It shows that the multilingual context of Shaba has created new norms, which are nativized according to the linguistic, social, and cultural context of Shaba. Thus, what has generally been regarded as its own rules and norms that are distinct from those of EAS.

This dissertation also establishes that while linguistic variation is used to show the extent to which people adhere to the norms of their vernacular culture, this adherence is not automatic given the presence of members of one's close-knit social network. It shows that though social variables such as participants, age, topic, gender, ethnicity, education, etc. can determine a speaker's linguistic behavior, they are each subconsciously assigned hierarchical index markings of vitality. The social variables with the highest indexation marking can over-rule the constraints of linguistic behavior dictated by formality or informality during a speech event. Members of any community are aware of this indexation marking and are cognizant of the fact that this indexation varies with the context of situation. These conclusions are

arrived at by providing both linguistic and attitudinal studies of the speakers, their beliefs, values, and affiliations vis-à-vis the different varieties found in their linguistic repertoire.

[78] Kenkel, James Michael 1991
Advisor: Yamuna Kachru

Argumentation pragmatics, text analysis, and contrastive rhetoric

The contrastive rhetoric hypothesis (Kaplan, 1966) predicts that language users across cultures will vary in the means they use to construct coherent discourse. The problem for contrastive rhetoric research is to develop a method for reliably describing this variation. To this end, a number of methods of text analysis have been proposed that claim to describe the linguistic and discoursal features crucial to coherent interpretations of text. In this dissertation, I review these method and then present an alternative adapted from argumentation pragmatics (Ducrot et al., 1980) and the model of discourse structure proposed by Roulet et al. (1985). Ducrot's theory rests on the observation that utterances in sequence are describable as having one of two functions — that of being an argument for some conclusion or a conclusion from some argument(s). Roulet proposes a hierarchical model of discourse having three constituent types: acts, moves, and exchanges. To text the contrastive rhetoric hypothesis, using this method of analysis, I analyzed twenty lead editorials each from the *The Times of India*, *The Singapore Straits Times*, and *The New York Times*. These texts represent three distinct varieties of English from three different cultural settings (Kachru, 1986) and as such allow for testing the contrastive rhetoric hypothesis. The results of these analyses do not support the hypothesis that language users across cultures vary in the means they use to construct coherent discourse.

[79] Kenstowicz, Michael John 1971
Advisor: Robert B. Lees

Lithuanian phonology

I have essentially two goals in this dissertation. First, I try to formulate a description of a wide variety of data about the phonology of contemporary Standard Lithuanian within the theoretical framework of generative grammar, a framework which permits a surprising amount of insight into the data. This goal is not trivial since, although there are several traditional phonemic descriptions such as Senn's *Handbuch der Litauischen Sprache*, Stang's *Das Slavische und Baltische Verbum*, and Otrebski's *Gramatyka Jezyka Litewskiego*, the latter being by far the most informative, they fail, except for fairly low level and transparent phenomena, to bring any significant generalizations to bear upon the data. For this reason I do not present any new additional data in this description, but rather provide an analysis of some of the facts already given in the above works.

My second goal has been to confront the theory of generative phonology, which as been most systematically presented in Chomsky and Halle's *The Sound Pattern of English*, with a rather diverse set of data from still another language. In some of the cases where the theory does not, in my opinion, permit the proper insight into the data, I have attempted to extend it along lines which will allow for such insight.

It should be admitted at the outset that these goals have only partially been attained. With regard to the first, the description presented here is far from complete, there being many aspects of the language which I have omitted from consideration. Thus, derivational morphology is only touched upon sporadically, and several of the nominal declensions and verbal paradigms are not treated. In general I have concentrated on those phenomena which either would be essential to any phonological description of Lithuanian or those which are of inherent interest. However, in spite of this limitation, I believe that most of the rules I have formulated would be retained in essentially unaltered form if more data were considered. I therefore feel that the description presented here is, on the whole, a fairly faithful reflection of the phonological structure of the language. As far as the second goal of confronting the theory with a fresh set of data is concerned, here too it must be admitted that there are many features of the language which I don't think are properly illuminated in my description. In some of these cases this lack of insight can be attributed to the theoretical framework within which the description is formulated and my inability to extend it in such a way as to achieve the necessary insight.

[80] Khalil, Aziz M. 1984
Advisor: Sandra Savignon

Communicative error evaluation: A study of American native speakers' evaluations and interpretations of deviant utterances written by Arab EFL learners

This study is an attempt to investigate American native speakers' evaluations and interpretations of grammatically and semantically deviant utterances written by Arab EFL learners and to establish communicative criteria that may be utilized in selective error correction and in the writing and sequencing of teaching materials. The purpose of this study is threefold: (1) to investigate the differences between judged intelligibility and naturalness; (2) to investigate the extent to which error type (grammatical or semantic) and immediate linguistic context affect the intelligibility, naturalness, and interpretability of deviant utterances; and (3) to provide a validation measure for judgments of intelligibility.

Two types of measures were used: Evaluation and Interpretation. The former involved the evaluations of deviant utterances, presented both in and out of context, on four-point scales of intelligibility and naturalness. The latter required the selection from among four options of the best interpretation of the meaning intended by the Arab writer.

This experiment included two factorial designs: a between-subject design for naturalness and intelligibility and a within-subject design for intelligibility and interpretation.

The subjects consisted of 240 American undergraduate students enrolled at the University of Illinois at Urbana-Champaign. The results of t-tests indicated that utterances were generally judged to be more intelligible than they were natural. The ANOVA results showed that semantically deviant utterances were judged to be less intelligible and interpretable than were grammatically deviant utterances. Immediate linguistic context did not influence native speakers' ability to interpret the writer's intent. Two factors were noted that may account for this unexpected result: the limited amount of context provided and the poor rhetorical quality of this context.

Fisher's Exact Text results showed no association between the subjects' performance on the two measures of intelligibility and interpretation. This result raises questions as to the basis for judgments of intelligibility since these do not appear to reflect native speakers' actual comprehension of the meaning intended by the writer. Rather, they appear to indicate the extent to which native speakers think they understand the meaning of the deviant utterances.

The implications of these results for the methodology of communicative error evaluation and classroom teaching are discussed.

[81] Khan, Baber Sultan Ali 1989
Advisor: Jerry Morgan

The Urdu case system

This dissertation analyses the complex Case system of Urdu within the framework of Government and Binding (GB) theory. It concentrates both on the word order and the phrase structure order of the language and on the assignment of various Case to subject NPs in Urdu.

The flexible word order of Urdu has previously been explained in terms of typological features and frequency count methods. Chapter two of this study argues for an SOV order in terms of a directionality parameter associated with the Case and Theta theories. A leftward directionality of Case and Ø-role assignment in Urdu accounts for the head final character of the language. The principle of Case adjacency accounts for the obligatory occurrence of a postposition with the indirect object and explains why direct object remains adjacent to the verb.

The GB theory assumes the Verb-raising rule to be part of the Universal Grammar. However, in Urdu, such a rule will produce an incorrect surface word order due to the assumed order of the phrase structures. Chapter three demonstrates that an alternative analysis, viz. INFL-lowering, not only allows the correct word order but also explains the verb-agreement facts in Urdu.

The final chapter provides further evidence for the INFL-lowering rule and explains how nominative, ergative, dative, and instrumental Cases are assigned to subject NPs. It is argued that perfective morphology absorbs accusative Case. Similarly, dative and unaccusative verbs are incapable of assigning Case to their internal arguments. This invokes INFL-lowering which assigns nominative Case to internal argument but the external argument is consequently left Caseless. A postposition-insertion rule is, thus, required which inserts an appropriate postposition in front of the subject NP to assign it the necessary Case.

[82] Khoali, Benjamin Thakampholo 1991
Advisor: Charles W. Kisseberth

A Sesotho tonal grammar

This dissertation is an account of the tonology of Sesotho. A phonological component consisting of such subsystems as the theory of moraic phonology, metrical phonology, autosegmental phonology and prosodic phonology is presupposed. Whenever relevant, I appeal to the principles and rules that govern each of these subsystems.

The main contribution of this thesis is, however, the role played by prosodic domains in the tonology of Sesotho. Four such domains are utilized to constrain the application of tones rules for the language. These are the syllable, the phonological Word (W-domain), the Clitic Group (C-domain) and the Phonological Phrase (P-domain).

Tone rules in Sesotho can classified into two groups: assimilatory and dissimilatory. Assimilatory rules involve spreading of H tones. There are two types of such H tones: lexical H tones and grammatical H tones. Lexical H tones assimilate by spreading one mora to the right whereas grammatical H tones spread all the way to heads of metrical constituents. Dissimilatory processes, on the other hand, involve various kinds of deletion and delinking of H tones. Such dissimilatory processes are shown to be responses to violations of the OCP. The responses to these violations of the OCP are different from one dialect of Sesotho to the other.

Tone rules which have been found to be constrained by these prosodic domains are: (1) Meeussen's Rule — a W-domain span rule, (2) Right Branch Delinking — a W-domain and C-domain span rule, (3) High Tone Spreading — a W-domain and a C-domain span rule, (4) Downstepping — a P-domain juncture rule, (5) Left Branch Delinking — a W-domain limit rule, (6) H Tone Insertion — a P-domain limit rule, (7) M Toning — a P-domain limit rule, and so forth.

The interaction between phonology and syntax is also discussed. It is demonstrated that heads which are C-commanded by Chomsky-adjoined constituents are at the ends of P-domains. Otherwise, the extreme right bracket of a Xmax is the end of a P-domain. Independent syntactic evidence to support the claim concerning the role played by tone in signalling Chomsky-adjoined constituents is advanced.

[83] Kidda, Mairo Elinor 1985
Advisor: Michael Kenstowicz

Tangale phonology: A descriptive analysis

Tangale, a Chadic language spoken in Nigeria, exhibits a considerable number of phonological alternations at the segmental and tonal levels.

In this dissertation, we attempt to present a descriptive account of the alternations within the theory of generative phonology (Kenstowicz & Kisseberth, 1976, 1979) enriched with the autosegmental representations introduced in works by Leben (1971), Clements (1977) and Halle & Vergnaud (1980), among others.

The dissertation is divided into four chapters: 1. An Overview, 2. Syllable Structure, 3. Assimilatory Processes and 4. Tone. In Chapter 1, we present a general survey of the Tangale dialects and dialect differences in terms of lexical items and notable phonological rules. Then, we provide a brief summary of the sound system of the language and some morphological and syntactic processes that are relevant to our study. In Chapter 2, we examine the alternations that are related to the syllable structure. These alternations are accounted for in terms of the syllable theory sketched in Halle & Vergnaud (1980) and later elaborated in Clements & Keyser (1983). Chapter 3 discusses the two assimilatory processes: obstruent voicing assimilation and vowel harmony. The vowel harmony system is described within the autosegmental framework (Clements, 1977). Finally, in Chapter 4, we present descriptions of

the tone and tonal processes in the language. Like the vowel harmony, the tone and tonal processes are described in terms of the autosegmental theory.

[84] Kim, Hyoung Youb 1990
Advisor: Chin-Wu Kim

Voicing and tensification in Korean: A multi-face approach

The purpose of this study is to present a more satisfactory explanation for several morphologically and syntactically conditioned phonological phenomena, in particular, voicing and tensification in Korean. I will propose a multi-face model which enables these phonological phenomena to be accounted for on the basis of their interaction with morph-syntactic structures.

Chapter I provides the basic phonological background against which this study will be done, i.e., an inventory of underlying segments, the syllable structure, and a set of basic phonological rules in Korean. Apparent exceptions to rules of voicing and tensification will be noted.

Chapter II gives a critical review of the past studies done on voicing and tensification in Korean. Inadequacies in these studies gives justification for the present study.

Chapter III proposes a multi-face model as a theoretical framework for this study. This model integrates interactions between phonology and syntax, and between morphology and syntax as well as interactions between phonology and morphology for a satisfactory analysis of the phonological phenomena in question. It is argued that this model is an improvement over the framework of prosodic phonology proposed by Nesper and Vogel (1986).

Chapter IV deals with analysis and description of voicing in Korean within the multi-face model. It consists of two parts: First, I show that complex verbs ending with *-i* or *-ha* belong to the noun incorporated forms. Even though they show the same morphological structure as verbal compounds, I argue that they should be distinguished from the verb compounds on the ground that such phonological phenomena as palatalization and aspiration which apply within complex verbs do not apply within verbal compounds. Second, I show that compounds ending with *-ki* should be analyzed differently from those ending with *-i* in that compounds ending with *-ki* should be regarded as phrases rather than words.

Chapter V deals with analysis and description of tensification in Korean within the multi-face model. First, I argue that exceptional voicing in a noun compound can be explained by analyzing the compound as a syntactic phrase. Second, I treat tensification in the initial obstruent of the head noun in relative clauses after the prospective modifier *-(û)l*. Again I argue that the syntax of the relative clause explains the reason why tensification occurs in certain constructions but not in others. Third, I argue that some deverbal compounds should be dealt with differently because they have tensification which does not occur within the deverbal compounds. In order to account for these exceptional compounds I assign different morphological structures from other deverbal compounds.

Chapter VI discusses some theoretical implications of the results of this study by way of the conclusion.

[85] Kisseberth, Charles W. 1969
Advisor: Robert B. Lees

Theoretical implications of Yawelmani phonology

This thesis has been written in accordance with a not unusual pattern. Namely, it provides a reanalysis of the phonological component of a particular grammar, but is interested in this particular grammar primarily for the light it sheds on general phonological theory. Thus the description is by no means exhaustive, but rather confined to those aspects of the phonological structure which are of general relevance.

In Part I, we discuss the details of the analysis of Yawelmani. We begin the details of the analysis of Yawelmani. We begin with those aspects of its structure where we have no essential quarrel with Kuroda's analysis — the rules of Vowel Harmony, Lowering, Echo, Shortening, and the nature of the underlying vowel system. We then turn to the rules of Vowel Epenthesis and Vowel Deletion, which are central to later concerns of this thesis, and the underlying structure of suffixes. In these areas we do not follow Kuroda's analysis, and will attempt to establish our motivations for not doing so. The third chapter deals with the noun paradigms in Yawelmani and focuses primarily on the "protective vowels" (to use Newman's terminology) and how they are to be treated. Like Vowel Epenthesis and Vowel Deletion, the protective vowels will figure in later discussion in Part II. The final chapter of Part I deals with a number of phenomena which either further motivate other parts of the analysis, or have some general interest of their own. In this chapter in particular we discuss data not considered in Kuroda's monograph.

Part II centers around theoretical issues. First of all, we turn to the extremely important question which Kiparsky has recently raised — namely, "how abstract is phonology?" An example of a type of analysis which we feel must be ruled out on general grounds is given. The principles which Kiparsky proposes for eliminating such analyses are then investigated, and shown to run afoul when confronted with the facts of Yawelmani. We are not able to provide an answer to the general problem, but hope that discussion in this chapter defines the range of possible answers to a certain extent. In the second chapter of Part II, the notion of the "functional unity" of phonological rules is investigated, and a wealth of evidence from Yawelmani is brought forth in favor of amending phonological theory in order to recognize functional sameness as well as structural sameness. Some very tentative suggestions about how phonological theory might be amended to accomplish this goal are made. Finally, we examine briefly the theory of markedness, and attempt to establish (on the basis of the facts of Yawelmani) whether it can be maintained in the form proposed in Chomsky and Halle's *The Sound Pattern of English* (1968). Although this discussion is largely critical in nature, we hope that it is not without a certain positive character to it.

[86] Kleiman, Angela Bustos 1974
Advisor: Georgia M. Green

A syntactic correlate of the semantic and pragmatic relations: The subjunctive mood in Spanish

This dissertation is an attempt to characterize the interrelation between semantic-logical aspects of the underlying representation of a sentence and their formal expressions through the subjunctive mood. This relation is

investigated through an examination of Spanish, but the nature of the semantic and pragmatic notions to be examined are not necessarily language specific. This is not to say that other languages which have a distinct subjunctive, for instance, will use that mood in exactly the same circumstances where the Spanish speaker uses it, but that the information which determines that the subjunctive be used in Spanish is the type of information which must be available to speakers of any language regardless of the syntactic mechanisms through which they express it.

This dissertation is divided into two main parts; the division is not formal but determined by the nature of the phenomena investigated. The first part (corresponding to chapter two) deals with uses of the subjunctive which are predictable from syntactic and semantic properties of abstract verbs in the semantic representation of the structures; the presence of the subjunctive is determined by the syntactic phenomenon of rule government.

The second part of this dissertation (chapters three, four, and five) deals with cases where the subjunctive alternates with the indicative as a function in the differences in the semantic representation of the sentences, and of the speaker's beliefs and attitudes when uttering the sentences.

[87] Krause, Scott Russell 1980
Advisor: Michael Kenstowicz

Topics in Chukchee phonology and morphology

The purpose of the following dissertation is to propose a relatively complete generative description of Chukchee phonology and some of the more salient topics of the inflectional morphology. In chapter one the phonological phenomena which do not affect the syllabic structure of the language will be examined, including a complex dominant-recessive vowel harmonic system and an intricate network of consonantal assimilations and dissimilations. Chapter two will deal primarily with those phonological and morphophonemic processes which do affect the syllable structure, including numerous instances of schwa epenthesis, various consonantal deletions and vocalization, vocalic elisions, and even one example of metathesis. Chapter three will concentrate on the inflectional nominal phenomenon of reduplication and the entire complex inflectional verbal morphology.

During the explication of these various topics I shall attempt to fit them within a theoretical framework and discuss any pertinent issues which may apply, such as phonotactic conspiracies against highly complex consonantal configurations, animacy hierarchies, the concept of ergativity, and the like. Furthermore, I shall suggest alternate proposals when such theoretical guidelines are lacking in the literature, for instance a specific type of non-trivial global rule and a phonologically protective function for reduplication.

The examination of the Chukchee data was a bit unusual in some respects, since Chukchee is a Paleo-Siberian language of only several thousand extant speakers, and a native informant was therefore not available. Accordingly, this thesis was accomplished almost exclusively through the examination of the literature which has been written on the language, most notably the extensive two volume grammar by Skorik, several theoretical papers by Comrie, and the various dictionaries. Although the examination of the inflectional morphology did not suffer appreciably from this manner of investigation, certain phonological phenomena such as potentially stress

related topics did suffer (due to the scarcity of accentual marks) and must be left to future investigations.

[88] Langacker, Ronald Wayne 1966
Advisor: Robert B. Lees

A transformational syntax of French

The purpose of this study is twofold. On the one hand, it is offered as a modest but hopefully significant contribution towards the ultimate goal of an adequate generative description of modern French. It is hardly necessary to emphasize the very tentative character of the conclusions reached here. Those generalizations that are made concerning the construction of French sentences are almost certain to yield to deeper generalizations upon subsequent investigation. On the other hand, this study is intended to provide a certain amount of empirical evidence that may be taken into account in evaluating various theoretical proposals made recently as to the nature of grammatical organization in general.

The scope of the analysis is quite limited. In general, the policy has been followed of excluding a topic from the description rather than treating it in an obviously inadequate manner. It is believed that, at this early stage in our growing understanding of language, a relatively careful examination of a few specific problems will be of more value than a relatively superficial treatment of a wide range of phenomena. Nevertheless, it is impossible to achieve a fully adequate description of certain subsystems of French syntax viewing these in complete isolation from the rest of the system. Therefore, it is necessary to consider from time to time the effect, as well as can now be conceived, of extending the analysis to cover a broader domain. In some cases, on the basis of existing evidence, we must more or less arbitrarily select one analysis where equally plausible alternatives are known. Here again we must await the results of further investigation.

The problems considered fall into three fairly closely related areas. In chapter II, sentential and infinitival complements to nouns and verbs are discussed in some detail. Chapter III centers about those prenominal expressions sometimes called "indefinites" in traditional grammars. In particular, the relative merits of a constituent structure versus a transformational source for sequences like *chacun de ces livres* 'each of those books' are weighed. Finally, in chapter IV, we examine various pro forms with respect to their derivation and placement.

The list of subjects excluded from the analysis is perhaps more impressive, the most notable being conjunction and adverbs. Interrogatives are not treated directly, since they have been discussed elsewhere, but they are brought into the discussion in several places where they are relevant. Other exclusions and oversimplifications are indicated throughout. At the very least, one can hope that, as a result of this study, the nature and magnitude of the problems facing the analyst of French syntax will be better appreciated.

[89] Lederman, Shlomo 1987
Advisor: Charles W. Kisseberth

On the interaction of morphology and phonology: The Hebrew verbal system

This study develops and defends a detailed analysis of Hebrew verbal morphology, within the framework of the prosodic theory of

nonconcatenative morphology proposed by McCarthy (1979, 1981). Both Biblical Hebrew and Modern Hebrew are covered, with occasional reference to Mishnaic Hebrew. It is shown that the distinction between Pa'al as the "base" non-derived binyan as against the "derived" binyanim is well founded at least in formal morphological terms, i.e., Pa'al's two major CV-tiers being CVCVC and CVVC vs. the derived binyanim's CVCCVC and CVVCVC CV-tiers (namely, the same CV-tiers for all derived binyanim), and the no-affix vs. affixing characterization of the base vs. the derived binyanim. As regards the phenomenon of medial gemination in Hebrew, and Semitic in general, it is argued that an Initial Tone Association analysis is to be preferred to the earlier proposed Erasure analysis, and a new theory on the diachronic development of medial gemination in Hebrew is proposed.

The question of the interaction of morphology and phonology is addressed and it is shown that certain phonological rules which give rise either to compensatory lengthening or assimilation strongly support the hypothesis that roots and vowel melodies are represented on autosegmental tiers independent of the CV segmental tier. It is shown that compensatory lengthening and assimilation have a simple and natural explanation within the prosodic theory, whereas these processes call for two-stage rules in a purely segmental approach.

It is argued that the Obligatory Contour Principle (OCP) holds for both Biblical and Modern Hebrew as a constraint against identical adjacent root melody elements. Apparent OCP violations, both in Biblical and Modern Hebrew, are explained as rising from a major dichotomy between the verbal and nominal systems in Hebrew. It is shown that all apparent OCP violations belong to the nominal paradigm, and owing to the different lexical representation of nouns vs. verbs, it is shown that these apparent counterexamples actually do not violate the OCP.

The existence of multiradical denominative verbs in Modern Hebrew is presented as problematic for a rigid Pi'el CVCCVC CV-tier for Modern Hebrew. These are argued to be outside the verbal system proper.

[90] Lee, Cher-Leng 1990
Advisor: Chin-Chuan Cheng

Recovery and translation of zero anaphoric subjects in Chinese

In reading a narrative, it is crucial to know who the writer is referring to. When the subject of each sentence is made explicit, this task of identifying the referent is simple. However, in a discourse-oriented language like Chinese, there is no grammatical requirement to have a subject in each sentence, and so zero subjects are the norm rather than the exception. There could be several entities present in a discourse made up of clauses with zero subjects. The reader will have to decide which entity is being referred to in each clause. The first part of this dissertation examines the cues that help readers identify the correct referent; the second part investigates how these zero subjects are translated into English where the subjects are usually made explicit.

It is proposed that the topic continuity of the relevant passage is important to recover the referents of zero anaphoric subjects. The recovery process begins at the predicate of the zero subject, then continues to the closest subtopic continuity, and then the next until the referent is found. Thus, recovery is said to be a bottom-up process. Principles that help decide whether

the most recent entity, the opening entity of the passage, or any other entity present is the referent are derived. This is done through the application of the topic continuity, discourse analysis, semantic matching and contextual knowledge.

An examination of the translation of the zero anaphoric subjects into English reveals that not only noun phrases, pronouns, and new nouns are used, but passives, cohesive devices such as coordination and subordination are used as well. The reasons that decide one usage or another can be that of specification, non-specification, or connection. The topic continuity again plays an important role, especially in the rearrangement of clauses and editing of a particular passage. In order to restructure the translated clauses, the topic continuity of these clauses has to be identified before dealing with the details of each clause. Thus, the restructuring of translation is a top-down process.

[91] Lee, Han-Gyu 1992
Advisor: Georgia M. Green

Some interaction of syntax and pragmatics in a study of pragmatic morphemes in Korean

This thesis has two goals, describing the uses of some selected Pragmatic Morphemes (PMs) in Korean and giving an account of their syntactic behaviors in the GPSG framework. First, according to the Cooperative Principle, I describe how the speaker uses a PM and how the hearer understands it. I claim that a PM has one sense and its various uses are inferred from that sense according to the Gricean CP. When the speaker uses a PM in his utterance, he assumes the hearer believes he has goals, and he expects her to be able to figure out its uses which are relevant to his goals in a way indicated by its sense because he believes she assumes he does not use it without any purpose. The hearer believes that the speaker used that PM in support of his goals, and can infer from its sense how it is relevant to his goal at the moment.

I deal with four PMs out of many in Korean. The PM *com* 'a little' is used to show the speaker's politeness to the hearer by implicating that he is minimizing the threat to her face, or to insult her by belittling her ability. The speaker uses the PM *tul* (plural marker) to indicate that an event he is describing occurred more than once, or that each referent of a subject of his utterance is involved in an event. The PMs *puthe* 'from' and *kkaci* 'to' are used to show that the speaker never expected an event/situation he is describing to occur.

Second, the morpho-syntactic behavior of PMs are analyzed within the GKPS (1985) version of GPSG. A new type of 'Near-HEAD' features is proposed for PMs, following the GPSG multi-headed approach to coordination. Near-head features are instantiated along head nodes like standard HEAD features in GKPS (1985), but they must observe an additional restriction that a node with them comes last in a local tree. The near-HEAD feature analysis predicts correctly that PMs are located on the lexical head of a phrase and that they appear on the final conjunct in coordination. However, I suggest that PMs can be treated through HEAD features, if we give up the GPSG claim that coordination is multi-headed.

[92] **Lee, Sang Oak** 1978
Advisor: Ching-Wu Kim

Middle Korean tonology

This research deals with various aspects of tonal phenomena in Late Middle Korean (15c.-16c.) MK tonology has been studied before by several native and foreign scholars. Two things distinguish this study from previous ones. (1) Scope — previous works are not inclusive but rather fragmentary. MK tonology is systematically organized and comprehensively discussed within the overall framework of MK from tonogenesis to tonal derivation to tone decay in one place for the first time. (2) Methodology — the present study adopts the framework of explanatory and generative phonology, while most previous works were carried out in the tradition of descriptive linguistics. In particular, approaches suggested by McCawley in tone typology and Goldsmith in tone derivation are applied to illuminate the nature of MK tone system.

In tone typology, this study demonstrates that MK tone is one of McCawley's "some tonal systems that come close to being pitch accent systems but don't quite make it." In particular, it demonstrates that MK has rules assigning pitch depending on the accent locations, behaving like a pitch-accent language up to this point, but that MK then requires morphophonemic and phonetic tone rules which are characteristic of a tone language. Previous studies classified MK either as a pitch-accent language or a tone language, not an intermediate between the two. Nevertheless, a revision of McCawley's model is also suggested.

In tone derivation, the present study first establishes that there are only two underlying tonemes, High and Low, in MK, not three, High, Low, and Rising, as MK tone markings suggest. It is demonstrated that Rising is underlyingly a sequence of Low-High. It also establishes that the basic tone melody in MK is L.H., thereby naturally explaining the absence of a falling tone in MK. It next discusses the reasons why the concept of mora, rather than that of syllable, must be employed in the description of MK tone. A detailed account of generation and derivation of MK tone is then given in sequence via four types of rules:

1. Pitch assignment rules
2. Morphophonemic tone rules
3. Phonetic tone rules
4. Rhythmic rules

In several places in the course of tone derivation and in a separate chapter, the autosegmental theory of tone proposed by Goldsmith is applied to show how it contributes to a more natural explanation of MK tonal data, and to discuss some theoretical implications of MK data for the theory. In particular, the need of segmentalization before the application of rhythmic rules is demonstrated and a part of the Universal Tone Association Convention is rejected on the basis of the analysis of MK tonal phenomena. As possible origins and evolution of tone in MK, Chinese borrowing and inherent Altaic origin are considered. But it is concluded that more plausible origins are an internal development from neighboring segments as appears to have happened in Jingpho; and a contour tone development by syncope, desyllabication, and contraction as has happened in many other languages. Some suggestive MK data are given and discussed.

Finally, it is suggested that perturbation and decay of MK tone was caused by the leftward movement of ictus.

[93] Leskosky, Richard John 1976
Advisor: Braj B. Kachru

Linguistic structuring and the cinema: A study in method

This dissertation will deal with the application of various linguistic concepts to the study of the cinema and the use of linguistic methods in the analysis of the film. Currently, many film theorists are appropriating linguistic terms and concepts (seemingly haphazardly) as tools in their research — often not without some violence to the linguistic concepts. This dissertation will not attempt to rectify these errors as such, except insofar as it attempts to present a valid linguistic interpretation of the cinematic data.

This dissertation is organized as follows. The present chapter will briefly survey some of the uses of the cinema/language metaphor as encountered in writings on the film and then will be given over to the definition of basic terms used throughout the succeeding chapters.

Chapter II will present a review of previous literature using linguistic concepts in approaching the cinema. The main concentration will be on the two major periods of such research — namely, on the work of Russian linguists and film makers in the 1920's and 1930's and on the current (from about 1960 to the present) work in this area consisting of three main approaches which may be characterized as structural, semiological, or psycholinguistic, respectively, depending on their orientation.

Chapter III will discuss the uses of language within the film. This takes two forms: spoken language (as in dialogue) and written language (as in the printed titles which still sometimes appear between scenes in films). The concept of redundancy will be discussed in relation to the semantic overlap between soundtrack and image track, and a paradigm of the possible uses of language within the film will be set forth.

Chapter IV will investigate the structural parallels between language and film. It will be demonstrated how current syntagmatic attempts at structuring the sequence of a film are insufficient for the task and how a transformational generative model akin to that used to describe human language provides an adequate description of the phenomena under consideration.

Chapter V will discuss the Firthian concepts of contextualization and context of situation in relation to the cinema. It will be explained how these concepts can be used to organize all the other systems of the film, including the structural system of Chapter IV. This will then be demonstrated with two examples.

Chapter VI will provide a conclusion and a summation of the preceding chapters.

[94] Livnat, Michal Allon 1984
Advisor: Charles W. Kisseberth

Focus constructions in Somali

The purpose of this study is to provide a syntactic analysis of focus constructions in Somali in the framework of transformational-generative

grammar. The emphasis is on NP focus constructions with the focus marker *baa* — a very common construction in Somali.

Focus is a predominant phenomenon in Somali. One constituent in every indicative affirmative sentence must be marked by a focus marker as the focus of the sentence. The focus marker may occur in either an unconjugated form or in a conjugated form where it is coalesced with a subject clitic. The analysis proposed in this study accounts for the distribution of the various forms of the focus marker.

The main problem which the thesis addresses is that focused non-subject noun phrases are marked by a focus marker which agrees with the subject of the sentence. Thus it may appear as if Somali exhibits an unusual phenomenon of agreement between subjects and objects.

The analysis which is proposed in this study makes it unnecessary to postulate such an agreement. According to this analysis any focused NP, regardless of its grammatical relation is extracted out of its clause and moved to a position in COMP where it is marked by the invariable unconjugated form of the focus marker. The conjugated form of the focus marker is the outcome of phonological rules which coalesce the focus marker with a subject clitic and are independent of the analysis of the focus.

One important consequence of the analysis is that a logical subject which is marked as the focus by the focus marker is not the grammatical subject of the sentence. Hence sentences in which the logical subject is focused are grammatically subjectless.

An analysis of the presence and distribution of subject clitics is proposed and the role of subject clitics in various types of clauses is discussed.

[95] Lowenberg, Peter Harper 1984
Advisor: Braj B. Kachru

English in the Malay archipelago: Nativization and its functions in a sociolinguistic area

This study analyzes and compares the non-native varieties of English in the countries of the Malay Archipelago — Singapore, Malaysia, and Indonesia. This region constitutes a sociolinguistic area by virtue of extensive shared sociocultural and linguistic features dating from the pre-colonial era. However, political, economic, and demographic developments during the colonial and post-colonial periods have created distinct sociolinguistic contexts for the use of English in each of these countries.

The basic theoretical premise is that realistic interpretation of non-native varieties of English requires a pragmatic and functional approach to the use and usage of language. From this perspective, a non-native variety of English is nativized to the degree that differences in its forms and functions from those in other varieties of English reflect acculturation into a specific sociocultural context and contact and interaction with other languages in multilinguals' linguistic repertoires.

Several important aspects of nativization are illustrated. First, nativization originates largely from the transfer of linguistic features from other languages and from creative innovation as an inevitable result of the use of English in non-native contexts. Second, much nativization can be linked to a number of sociolinguistic functions of language, including register, style,

and the expression of identity. Third, the degrees and types of nativization of English in a sociolinguistic setting are determined by the range of domains in which English is used and the number of speakers who use English in those domains. Fourth, changes in the sociocultural and linguistic settings of language use are generally reflected in altered patterns of nativization.

The analysis in this study is primarily textual, based on a wide range of written texts from each country rather than on close observation of verbal interaction. Implications of this research are discussed for several crucial issues in linguistic theory and its applications, including language planning and language pedagogy.

[96] Loy, Artha Sue 1966
Advisor: Robert B. Lees

Historical rules in the development of Modern French from Latin

The analysis presented in this dissertation is a set of ordered phonological rules which represent the major sound changes that occurred during the development of the French language. These rules are part of the phonological component of a transformational grammar of the type described by N. Chomsky in *Aspects of the Theory of Syntax*, (Cambridge: M.I.T. Press, 1965). A brief sketch of the theory and structure of a transformational grammar is given in Chapter I of this dissertation.

There are many handbooks and articles written on the development of French phonology which have been used as sources of data for this dissertation. However, the analysis presented here differs substantially from the analyses found in the literature. These differences are discussed in detail in Chapters II and III.

The purpose of this dissertation is to determine (1) what regularities underlie the changes that occurred during the development of pronunciation in the French language, (2) what phonological rules may be formulated in order to express these developments, and (3) to what extent the descriptive order of the rules, which is determined by the simplicity criterion, reflects the apparent chronological order of the rules.

[97] Lu, Zhiji 1991
Advisor: Chin-Chuan Cheng

A quantitative model in dialect subgrouping: The case of Modern Wu dialects

This thesis is intended to present a new model for the comparative study of dialects with the quantitative measurements, and under this new model, the subgrouping of the Modern Wu dialects, one of the major groups of Chinese dialects, is carried out, based on the syllable initials.

An overview is given on the previous approaches in the literature of the dialectology — namely, the traditional approach, structural approach and generative approach. Each approach has been applied to the case of the Wu dialects to accomplish the task of subgrouping. But none of them can overcome the difficulty of synthesizing the isoglosses, since they ignore the concrete processes of sound changes, and thus fails to determine the degree of associations among a number of related dialects. To study the sound change in process, based on the theory of *lexical diffusion*, initials a new route for quantitative study into dialect comparison.

Following the methodology in Hsich (1977), Cheng (1972), Lu & Cheng (1985), Cheng (1986, 1988), Lu (1986a, 1987a, 1987b, 1987c, 1988, 1989, 1990), the thesis proposes a new model, namely, *the systematic quantitative comparative model*. Since sound change is carried out by means of lexical items, the comparison of quantity of the influenced lexical items in the course of sound change will reveal the degree and scope of sound change in process. Under this new model, the syllable initials of more than 2,700 characters pronounced in 33 localities of the Wu dialects are collected and grouped with the reference of the Ancient Chinese to provide a large database for the systematic comparison. Then, the procedure designed for dialect comparison, which includes correlational analysis, cluster analysis and principal components analysis, is followed to carry out the subgrouping of these 33 localities. The results are presented and discussed.

[98] Lutz, Richard David 1985
Advisor: Yamuna Kachru

The effect of pronoun type on first and second language perceptual strategies in Hindi

In this thesis I will present empirical evidence that there is a general preference on the part of Hindi speakers to reassert the referent after a shift in sentence topic. While not a hard and fast rule, it can be shown that pronoun type (full or zero) also affects pronominal assignment, and may be one source of difficulty encountered by L2 learners of Hindi. Strong empirical evidence of this is presented in chapter 4.

The investigation presented here will necessarily span both syntactic theory as well as psycholinguistics. Before an understanding of how L1 and L2 speakers of Hindi process zero pronouns can be reached, a general discussion of the phenomenon will be provided. Chapter 2 will review treatments of pronominalization in general and in Hindi in particular. I will explore the distributional pattern of zero pronouns and demonstrate that this distribution cannot be explained completely by standard sentence-level processes. While syntactic deletion processes such as equi-NP-Deletion (Subbarao 1974) account for certain clear-cut examples of absent surface pronouns, there are numerous cases of zero anaphora which do not appear to be syntactically controlled, but rather, are the result of discourse-level pragmatic processes. I will then discuss the role of topic in zero pronominalization. In particular, such discourse-related notions as topic chain (adapted from Dixon 1972) appear to be useful in accounting for the distribution pattern of a large number of zero pronouns. The remainder of the chapter reviews research done on first and second language processing of pronouns, and outlines the perceptual strategies used in assigning antecedents to pronouns.

Chapter 3 provides corroboration of the role of topic flow as a predictor of zero pronouns. It contains the description and results of an experiment which tests the preferred patterns of distribution of zero pronouns at the discourse level as judged by L1 Hindi speakers. It establishes topic chain as a strong factor in the occurrence of zero anaphoric processes.

In chapter 5 I present the results of an experiment that contrasts the strategies used by L1 Hindi speakers with that of L2 students in the process of studying Hindi in secondary schools. The data indicate that such clues as verbal agreement are used by L2 learners, even at relatively low levels of proficiency in Hindi, in the assignment of reference to pronouns, and that

even such pragmatically difficult cases as the use of honorific pronouns are processed successfully by L2 learners at moderate levels of proficiency. On the other hand, discourse-level clues, while used by L1 Hindi speakers in processing anaphora, are not used by L2 learners until a very high level of proficiency is attained.

Chapter 5 contains a brief recapitulation of the results of the L2 vs. L1 experiment, and a discussion of their implications for a general theory of L2 acquisition.

[99] Magura, Benjamin Jameslai 1984
Advisor: Braj B. Kachru

Style and meaning in African English: A sociolinguistic analysis of South African and Zimbabwean English

This study presents an analysis of the style and 'meaning' of the variety of English used in the sociocultural context of South Africa and Zimbabwe. The focus is primarily on the African or Black English variety.

It is argued that the Blacks in this region have developed a variety of English that deviates in several ways from what is traditionally referred to as the 'standard' variety. Such deviations are essentially due to cultural and linguistic contact. The new variety thus developed has a set of functions which are not necessarily identical to those contexts in which the 'standard varieties' are used. It is also a variety developed for communication among non-native users of English. In short, the emerging Black variety has a style and meaning system appropriate for the African local situation.

It is shown that deviation in this variety is a result of many productive linguistic processes. These range from direct translation from local African languages, to various types of collocations, semantic shifts, calques, and innovations in lexicalization. These deviations are also evident at the discoursal level where they reveal a close relationship with discourse patterns in African languages.

The study provides a historical context for understanding the development of a Black English variety. It has passed through three basic stages. The first stage was when English education was restricted to very few Blacks who were expected to attain near-native fluency, and whose only other communicants in English were native speakers of English. This group's English showed an obsession with the flamboyant style of the great English literary works. The second stage was greatly influenced by missionary education, and thus echoes themes and linguistic style with a religious flavor. Even then, the goal at this stage is near-native fluency. The third stage marks a period when English education and use is no longer a privilege of a few. It is this stage that shows distinct features of Black English in this region. The feature at each stage are exemplified through literary works by Black artists such as: Plaatje, Dhlomo, Brutus, Mphahlele, Themba, Mungoshi. The study is organized in five major chapters: Chapter 1 is an overview of the study. Chapter 2 discusses various Africanization processes which make African English a distinct variety of English. Chapter 3 provides the sociolinguistic profile and gives an analysis of discourse in African English. The final chapter concludes with a summary and recommendations for further study and research. There is also an extensive bibliography.

[100] Makino, Seiichi 1968
Advisor: Henry R. Kahane

Some aspects of Japanese nominalization

The present thesis attempts to describe Japanese nominalizations in the framework of transformational grammar. Our major concern is to describe nominalizing processes formally. We are not concerned with writing a set of elaborate base rules, nor are we concerned with writing transformational rules of other syntactical aspects than the nominalization or those aspects that are closely concerned with writing transformational rules of other syntactical aspects than the nominalizations or those aspects that are closely related to them. We, therefore, refer the reader to such Japanese transformational grammars as Inoue (1964), Isami (1964-66), Duroda (1965), Soga (1966) and Ueda (1965) for the information on the over-all grammatical structure of Japanese.

The present thesis is organized in the following way. Chapter I discusses traditional Japanese grammatical theories in contrast to our transformational theory and discusses our position within transformational theory. Chapter II deals with the problem of how to describe the basic categorical distinction of adjective, adjective-verb, and verb, in order to simplify our description in the succeeding chapters. In Chapter III we sketch our concept of nominalization which is further formalized in Chapter IV. Chapter IV, in which we discuss the problems of Japanese nominalizations in detail, is the central chapter of the thesis. In Chapter V, the final chapter, we discuss typical nominal compounds and attempt to show how to derive them in terms of the nominalizing processes discussed in the previous chapters.

[101] Makiuchi, Masaru 1972
Advisor: Seiichi Makino

A study of some auxiliary verbs in Japanese

This is a study on so-called auxiliary verbs in Japanese, including *rare*, *sase* and nine *te*-form verbs, which is made within the framework of the theory of generative transformational grammar.

Basic to this thesis is answering the question as to what extent the semantics of these verbs have their bases on syntactic structures. It is observed, first of all, that any instance of the auxiliary verbs investigated shows a semantic dichotomy, which we present in terms of semantic features: *rare* (or the passive construction) has the dichotomy of [+Affective], *sase* (or the causative construction), of [+Coercive], and each *te*-form verb (construction) of a particular contextual feature. It is found that such a semantic dichotomy is not independent of the syntactic structure, but dependent on it to a large extent. The two readings of [+Affective] of the passive construction, for instance, stem from the differences in the deep structure. In addition, the specific verb-verb sequence serves to disambiguate the two-way ambiguous readings: the sequence of *rare* followed by (*te*) *sima-u* allows only the reading of {-Expected} for (*te*) *sima-u*; the sequence of *sase-rare* permits only the reading of [+Coercive] for *sase* and [+Affective] for *rare*.

However, it is also found that in some limited number of cases the syntactic structure is not the sole basis for the semantic findings. In these cases, it is claimed that it is necessary to take into account such factors as presupposition and/or knowledge of the speaker.

Finally, various observations concerning selectional restrictions on the verb-verb sequences tell us that these restrictions are independent of the syntactic structures, and that they belong to the problems of language independent, rather than of language particular.

[102] Marshad, Hassan Ahmed 1984
Advisor: Eyamba G. Bokamba

An approach to code elaboration and its application to Swahili

The purpose of this dissertation is to propose a theoretical model which makes it possible for languages like Swahili to acquire technical registers. A two-prong approach is suggested to build up the necessary terminology, and at the same time, cultivate the essential technical rhetoric to support the terms generated.

The first two chapters are designed to provide background information. Chapter I has, in addition to the preliminaries, an outline of the basic structure of Swahili needed in order to familiarize the reader with word formation processes, agreement patterns and sentence construction in this language. Chapter II focuses on language issues in Kenya where English is the official language and Swahili the ceremonial national language. A historical perspective of the evolution of the present Kenya language policy is presented. Also, various factors that have, in one form or another, impeded the ascendancy of Swahili as the official language of the country are examined.

Chapter III provides a framework for viewing language planning (LP) activities. Components of LP considered are: orthography, morphology, syntax and lexicology. Under each, recommendations are given that will, to a certain extent, contribute to the strengthening of Swahili as an efficient communicative tool in the domain of science and technology.

Chapter IV concentrates on the proposed approach to code elaboration. It is suggested that technical registers in languages such as Swahili can be developed in two phases. The first phase involves liberal adoption of terms (not available in the target language) from English. Arguments are given to show that this is a pragmatic way for a developing language to acquire rapidly and at a minimum cost a systematic growth of these registers. Included are discussions on issues related to nativization of the loan terms.

The objective of the second phase is indigenization (local coinage) of some of the terms relevant to primary and secondary school curricula; the main reason for this is the consideration that indigenous terms may have a pedagogical value in the basic cycle of education. For this phase, a conceptual framework is developed in order to facilitate the process of creation of a viable indigenous technical register. It is argued that it is only by starting at the concept level, not at the term level, that pitfalls and frustrations associated with "term translation" can be avoided.

Chapter V treats the technical rhetoric aspect of registers. Swahili, like any other language, has the necessary rhetoric elements (conjunctives, logical elements, special purpose verbs). But, like it is in all developing languages, these elements need to be made more rigorous and precise. For this, cluster analysis and semantic grid techniques are proposed as a method for charting the semantic field of these elements. By the use of such techniques, local lexical elements can be standardized and thus be matched precisely with

those from an international source; and in this way, translation of scientific texts from any international source will be facilitated.

Chapter VI consists of a summary and implications of the proposed model.

[103] McCawley, Noriko Akatsuka 1972
Advisor: Michael Geis

A study of Japanese reflexivization

This is a study in the syntax and semantics of Japanese Reflexivization. In Chapter I, it is shown that Japanese Reflexivization has two aspects, language-specific and language-independent. The former is the subject-antecedent condition and the latter is the command condition. The domain for Japanese Reflexivization is not confined to the simplex sentence as its English counterpart. It goes down into embedded sentences just like English simple pronominalization. Japanese has reflexive possessives, which English does not have. Despite those facts, the native speaker of Japanese somehow feels that languages like English make much more extensive use of reflexives. Chapter II is an attempt to explain why that is the case. A syntactic constraint called the Like-NP Constraint is proposed.

A grammar of a human language is a tightly organized system. In Chapter III, it is shown that the study of Reflexivization sheds light on the treatment of Japanese passives. Currently, there are two opposing hypotheses. According to the one, all instances of passives are derived from the same complex deep structures. According to the other, there are two types of passives in Japanese and one has a complex deep structure and the other has a simplex deep structure. First, it is shown that various semantic-syntactic facts including facts about reflexivization argue strongly against the uniform treatment. Then, it is argued that the current non-uniform treatment, too, is inadequate in an important way and a new analysis is proposed.

Chapter IV treats backward Reflexivization in emotive causatives in which the subject-antecedent condition appears to be violated. First, it is demonstrated that all of the current analyses of emotive causatives are wrong. Then, it is shown that backward Reflexivization in emotive causatives is actually part of a more general problem, namely, backward Reflexivization in non-agentive causative constructions. In Chapter V, it is claimed that backward Reflexivization is actually an instance of ordinary forward Reflexivization in which the true antecedent has been deleted in the course of the derivation. The subject-antecedent condition is claimed to be still operative here.

I have made the following assumptions throughout the thesis. First, case markers do not exist in the deep structure and are introduced by a transformation. The reader is referred to Kuroda (1965b) and Kuno (1972). Second, the VP node does not exist. Third, Japanese is a SOV language and English is a SVO language both on the deep and surface levels. In addition, I have ignored the topic marker *wa*, which occurs in many of the examples instead of the subject marker *ga*. The difference in meaning between sentences with *ga* and sentences with *wa* in its place is discussed with great insight in Kuno (1972).

[104] McMurray, Alice 1978
Advisor: Jerry Morgan

English nominalizations and derivational morphology: A transformational analysis

This dissertation investigates the type of category change referred to by traditional grammarians as transposition, and assumes a productive, transformational approach to the relation between multimorphemic items and the stems on which they are based (e.g. writer, write; destruction, destroy). The scope of the investigation is limited to nominalizations in English, with emphasis on the generation of derived nominals.

Considering nominals in the larger framework of transposition allows the current transformational and nontransformational approaches to be seen as two intuitively valid positions which have been represented throughout the history of linguistics; this allows the question to be viewed as a continuing theoretical issue, rather than as a strictly contemporary problem resulting from the existence of two competing theories.

By investigating derived nominals within the framework of all nominals, the differences between derived and other kinds of nominals can be specified, and the common assumption of both generative and interpretive semantics that all nominals are generated by the same means is shown to be invalid. It is shown that, whereas nominals such as writer can be derived transformationally by the minimally powerful means of prelexical combining rules, derived nominals such as destruction require a more powerful means of derivation, in which target structures of the surface must play an active role.

[105] Menn, Lise 1976
Advisor: Howard Maclay

Pattern, control, and contrast in beginning speech: A case study in the development of word form and word function

This study follows linguistic aspects of the developing communicative competence of a child named Jacob from a first observation when he was twelve months and eight days old until he was twenty months and twenty-two days old. At the time of the first observation, he babbled freely, but had only one vocalization that was recognized as a 'word'. Jacob's native language, and that of this parents and the investigator, was American English.

The study focused on the acquisition of phonology: the sound patterns of those of the child's utterances considered to be words, the way in which those patterns were related to one another, and the way in which they were related to the sound pattern of the language he was learning, English.

In defining the area of study, it was necessary to consider in detail the notion of 'word' in very early child speech. This topic proved to be of interest in its own right, and it became the subject matter for chapter 2 of this work. Chapters 3, 4, and 5 roughly follow the usual mode of description of the phonology of a non-tone language: first, phonetics and phonemic structure, then phonological rules, and last, suprasegmental phonology.

[106] Mmusi, Sheila Onkaetse 1992
Advisor: Charles W. Kisseberth

Obligatory Contour Principle (OCP) effects and violations: The case of Setswana verbal tone

This dissertation is an autosegmental analysis of the tonal patterns manifested in the verbs of Setswana, a Southern Bantu language spoken in Botswana and South Africa. Verbal tone in this language is very complex because the tonal patterns fluctuate, depending on many factors. These factors include, but are not limited to, for example, the syntactic environment in which the verb occurs, and the type of morpheme, high or toneless, that precedes the verbstem. The matter is further complicated by the fact that there are two types of verbstems in Setswana, namely, high-toned versus toneless (low-toned). All of these factors taken together result in the variability of verbal tonal patterns attested in this language.

The aim of this study, is to offer an analysis of what may be viewed in the literature on tonal studies as evidence that Setswana verbal tonal patterns violate the phonological principle termed the Obligatory Contour Principle (OCP). The OCP is assumed to be a universal principle by most authors who subscribe to its existence. According to this principle identical features cannot exist side by side. In the case of Setswana tone, the implication is that a sequence of high tones is prohibited. The very presence of these tonal sequence in Setswana presents a case that the OCP does not hold for this language. We disprove this fact by appealing to a weaker version of the OCP whereby sequences of singly-linked high tones are allowed whereas sequences of multiply-linked high tones are not allowed. The conclusion reached is that the OCP is a parametrical principle whose manifestation is dictated by any particular language.

[107] Mobaidin, Hosam Eddin Zakaria 1988
Advisor: Howard Maclay

Tense and aspect transfer errors: A new analysis of transfer errors in English compositions of Jordanian university students

This study is an attempt to provide a better understanding of the role of L1 transfer in a relatively neglected area, namely, that of tense and aspect. In particular, this thesis investigates the role of transfer from Arabic into English with regard to forms and functions of the English tenses and aspects.

The study provides a contrastive analysis of the Arabic and English tense and aspect systems. The analysis is conducted in terms of both form and function. The results of the contrastive analysis are checked against errors found in ninety-four compositions written by Jordanian university students. Ten of these error types are discussed in detail.

The study reveals that the investigation of the role of transfer in the area of tense and aspect should take into consideration both form and function. Moreover, the study supports the view that language transfer should be looked at, not as a simple mechanical process, but rather as a complicated phenomenon that interacts in intricate ways with developmental factors of L2 language learning.

The study lends support to Schachter's (1983) approach to language transfer, which acknowledges transfer as a constraint on hypothesis testing.

[108] Mochiwa, Zacharia Salimu Marko 1988
Advisor: Ladislav Zgusta

Depletion as both a syntactic and semantic phenomenon: The case of Swahili

This thesis is an investigation of both the syntactic and semantic behavior of verb-noun sequences which convey syncategorematic meanings. In terms of their syntactic patterning, the constituent elements in each of these sequences — which are referred to as multiword lexical units — are frozen although not at the same degree. To express this syncategorematic meaning a transitive verb loses its transitivity whereas the noun loses all features which are characteristic of linguistic forms belonging to this category as well as those which are characteristic of nouns functioning as objects of their verbs. Consequently, the nouns cannot participate in any of the morphosyntactic processes they are subjected to, either as nouns or object nouns. The inactivity of the constituent elements of multiword lexical units is — it is contended — indicative of their syntactic opacity. To the extent that categorial labels such as verb, noun and adjective etc. are functional — that is to say, the linguistic forms themselves bearing them are not inherently verbs, nouns, adjectives etc. — linguistic forms which do not function as nouns as revealed in multiword lexical units cannot be treated as nouns; instead they are treated as particles.

In terms of their semantic patterning, multiword lexical units express noncompositional meanings. That is to say, one cannot derive the meaning of any one multiword lexical unit on the basis of its constituents. This points to the fact that multiword lexical units are also semantically opaque. There is, therefore, a clear correlation between syntactic and semantic opacity.

On the basis of these findings three conclusions are drawn. First, multiword lexical units are not syntagmas because they violate the principle of syntagmatic interdependences characteristic of any syntagma, in which the whole depends on the parts and the parts on the whole in terms of both form and function. Second, multiword lexical units have to be treated as lexical units in the dictionary because to the extent that they are not syntagmas, they are opaque both syntactically and semantically. In other words, instead of entering it either under the noun or the verb, a multiword lexical unit has to be treated as an entry. Treating any such unit as a subentry of either of its constituent parts makes the inevitable claim that there is a semantic relationship between the unit and the constituent parts under which it appears. That the claim is untenable is demonstrated by the noncompositional nature of the meanings multiword lexical units express. Third, to the extent that these sequences behave just like single words, their constituent parts are comparable to the syllables of a word. Consequently the internal structure of multiword lexical units is not comparable to that of sequences expressing either literal meanings or nonliteral ones which are derived from the literal ones.

[109] Moffett, Elizabeth Jean 1966
Advisor: Henry R. Kahane

A glossary of the Spanish Inquisition

The ensuing study is a contribution of the studies pursuant to the semantic notions set forth by Jost Trier. According to his theory, no word has

an independent meaning but is a representative of the sum-total of the meanings of all other words which share its same semantic field. Every word brings an influence to bear upon another word, and this influence must be reckoned with in the understanding of the meaning-content of a word. So, in the study under consideration, as is evident in Chapters III and IV, the total word-complex comprising this field plays a role in the determination of the connotations accompanying each individual word.

This, then may be viewed as an application of Trier's theory to the semantic field of the Inquisition. It is an attempt to demonstrate that the meaning of each word in the glossary must be interpreted in the context of the whole semantic field in which it occurs.

The glossary included in this work is a compilation of terms used in Spain referring to the Inquisition. It focuses mainly on expressions in currency during the sixteenth century (the earliest being 1464, the latest, 1660) with a preponderance ranging from 1550-1580. They have been culled from documents written by those involved in the Inquisition during this period (a fuller discussion of the sources used will be found in Chapter II).

In the quotations of the glossary, the spelling as well as punctuation of the original documents were retained. For this reason many apparent inconsistencies in both will be observed. It was during the sixteenth century that the Spanish language became standardized and with it came unification of spelling, but some documents still reflected the instability that had been present earlier. No attempt has been made to list these spelling variants separately in the entries. In a study whose orientation is semantic rather than phonetic this seemed irrelevant.

The main entry is presented in the written form of the standard language whether or not it actually occurs in the records. Where a variant of the word occurs in the quotation, it is listed after the main entry. Variant is to be here understood as a morphemic alternation.

The definitions have been established by means of the context in conjunction with certain contemporary and modern lexica. These are listed in Chapter II.

The words are arranged alphabetically by single word entries. Phrases are listed under the entry of the head constituent. An attempt has been made to cross reference all words with lexical meaning in each group.

Chapter III is a catalog of all expressions used in the glossary, grouped according to semantic sub-fields.

Chapter IV contains an analysis of the entire vocabulary and the role of its constituents in the total picture of the Inquisition as presented in this study.

[110] Morrow, Phillip Robert 1989
Advisor: Yamuna Kachru

Varieties of business English: A linguistic analysis of written texts

The spread of English as an international language has resulted in the development of several varieties of English that are used by particular groups for specific functions. Among these varieties, one that has gained considerable prominence is Business English. This prominence is evidenced

by the growing number of non-native speakers who use English on a regular basis for the conduct of business and by the increase in pedagogical materials for teaching Business English. But despite this interest in Business English there is a lack of empirical research to investigate the fundamental questions concerning the description of Business English.

This dissertation draws on research from several general areas of linguistic inquiry: Text Linguistics, Discourse Analysis, Ethnography and Sociolinguistics. The Literature Review in Chapter 2 discusses the research in these areas which pertains most directly to the questions and concerns of this study. Since the primary goal of this study is the analysis and classification of one variety of texts — Business English — the review begins by examining some of the concepts and notions that have been used to classify texts: genre, text type and register.

An analysis of written business texts is presented in Chapters 3 and 4. The analysis presented in Chapter 3 is a comparative quantitative analysis of selected linguistic features and structures in business and non-business texts. Chapter 4 presents a qualitative analysis of some salient features of business texts from selected genres.

The findings of this study have implications for issues related to the typological classification of texts and for the pedagogical purpose of teaching Business English to non-native speakers of English. The final chapter (Chapter 5) draws together the analyses presented in the preceding chapters and summarizes their contribution toward answering the central questions related to the typological classification of texts and the pedagogical concerns.

[111] Nakazawa, Tsenuko 1991
Advisor: Jerry Morgan

A logic feature structure and unification with disjunctive and negative values

This dissertation proposes a unification-based formalism to provide a common basis for a computational realization of different linguistic theories, GPSG, HPSG, and LFG in particular, both as a means of theory testing and for the purpose of developing natural language processing systems. A logical language, called LFD, is proposed to describe feature structures and unification as common components across different theories.

The goal of formalism is to provide an efficient computational solution to the unification problem while allowing enough expressive power for common linguistic concepts, such as disjunctive and negative values, and value sharing. The semantics of disjunctive and negative values is reevaluated as constraints on instantiation of unspecified values, and the semantics of negative values is defined in such a way that the satisfiability is monotonic with respect to the subsumption order. An intuitive correspondence between disjunctive and negative values e.g. 'first- OR second person' and 'NOT third person', is formally captured as logical equivalence, and further extended to complex values.

Underspecification, a central notion in unification-based formalisms and theories, is viewed as a property of the description of feature structures, rather than structures themselves. A special purpose atomic value, called 'unspecified value', is proposed as a primitive expression of LFD. This value plays a crucial role in stating disjunctive values in terms of logically equivalent negative values in the underspecified description of feature

structures. Furthermore, this value makes it possible to express obligatory instantiation of values without specifying a particular value, a long-standing problem for which no coherent computational solution has been given.

Any formulas of LFD can be converted to a clausal form similar to Horn clauses, called negative definite clauses, whose satisfiability can be computed in polynomial time. A preprocessed form, called a prefix closure, of formulas to specify value sharing is proposed. Although the conversion of formulas into negative definite clauses could expand the size of input formulas exponentially, thus nullifying the computational efficiency of the clauses, the computational advantage of the proposed approach is shown in the context of consecutive unification operations.

[112] Nelson, Cecil Linwood 1984
Advisor: Braj B. Kachru

Intelligibility: The case of non-native varieties of English

This study examines the concept of intelligibility from several points of view: interpretive, linguistic, and pedagogical. It is shown that intelligibility is a sociolinguistic notion; i.e., it is grounded in the structure of language, and finds its meaning and applicability in the use of language among participants in speech activity. It is shown to be the most felicitously interpretable with reference to the levels of language, from narrowest phonetic detail to broadest cultural assumptions. Two empirical investigations are reported on. The first is an examination of a non-native variety text, *Kanthapura*, by the Indian writer Raja Rao. The intelligibility of the text is examined, though no attempt is made to quantify its degree. This investigation contributes to the growing literature on non-native varieties of English, and speaks for the legitimacy of the "new Englishes." The second empirical study is a phonetic investigation of the timing differences between interstress intervals of zero and one unstressed syllable in the Indian and American English of twelve informants. The hypothesis, that significant deviation in timing across the varieties exists, is borne out. An attempt at verification of this difference in the perception of linguistically unsophisticated native and non-native listeners indicates that the difference is not salient enough to override other features of speech in determining overall intelligibility. Finally, implications of research in intelligibility for various linguistic enterprises are discussed.

[113] Newmeyer, Frederick J. 1969
Advisor: Robert B. Lees

English aspectual verbs

This work is an explication of part of the linguistic competence of every speaker of English. I feel that the theory of transformational-generative grammar, whose goals were first defined in Chomsky (1957), provides the best means of characterizing this competence and have assumed its fundamental correctness throughout. In addition, I have drawn upon the theoretical advances of Lees (1960), Katz & Postal (1964), and Chomsky (1965).

Unless stated explicitly otherwise, the specific theoretical framework will be that of Chomsky (1965). In other words, I assume that there exists a well-defined level called deep-structure which is equivalent to neither surface-structure nor semantic representation, but is intermediate between them. I assume, along with Chomsky, that there exist transformational rules, which

map deep-structures onto surface -structures, and there exist interpretive rules, which map deep-structures onto semantic representations. Furthermore, I adopt his assumption that it is at the level of deep-structure at which selectional relations between lexical items are defined, that at this level "strict subcategorial and selectional restrictions of lexical items are defined by transformational rules associated with these items." (p. 139)

I have not adopted in the main body of this work any specific proposals for alteration of the grammatical model made since Chomsky (1965). However, I did not do so only because Chomsky (1965) was the most detailed exposition of grammatical theory available, rather than because I agreed with it on all points. In the section entitled "Concluding Remarks" I will show how evidence from Chapters II through VI points toward the incorrectness of Chomsky (1965) on several basic issues.

[114] Obeidat, Hussein Ali 1986
Advisor: Eyamba G. Bokamba

An investigation of syntactic and semantic errors in the written composition of Arab EFL learners

This study is an attempt to investigate the syntactic and semantic errors in the writing of Arab students studying English as a foreign language and to examine the relevance of these data to L2 universals.

The study is based on 150 compositions selected from the written English of first and second-year English majors at Yarmouk University in Jordan. The compositions are analyzed and a number of deviations are identified, sorted out and classified according to their type, level of structure and source of interference inter- or intralingual. Thirteen categories of syntactic and semantic errors are found to be problematic and explained. The study reveals that mother tongue interference plays a major role in students' writing.

Unlike previous studies which have generally focused on structural errors, this research specifically shows that deviations are due to several factors: linguistic and non-linguistic. First the deviations identified here are shown to be common to all ESL/EFL learners and not particular to Arab EFL learners. Second, it is argued that the processes of foreign language learning are not any different from second language learning. Third, the study suggests that certain categories of errors can not be explained in reference to a particular language rather by allusion to universal parameters that language learners in general possess as part of their language faculty. Finally, it is argued that limiting the scope of error analysis to linguistic structure and psycholinguistic factors in an attempt to construct a theory of language learning is in itself not sufficient. One must consider other factors as well. For instance, a focus on the communicative function of the language in its sociocultural context in addition to other non-linguistic factors is equally important for a more comprehensive theory of language learning.

The theoretical and pedagogical implications of these results for foreign language learning/teaching are discussed.

[115] O'Bryan, Margie Cunningham 1973
Advisor: Charles W. Kisseberth

The history and development of the verbal system of Early Middle Indic

Between the periods of Old Indic and Early Middle Indic (represented here by Sanskrit (Skt.) and Pali (Pa.) respectively), heavy restrictions developed on surface consonant cluster and on syllable structure in general. Although these changes caused considerable restructuring in the language as a whole, their most interesting effects can be seen in the verbal system of Pali, where extensive reinterpretation of the derivational processes, both morphological and phonological, were necessitated. The changes which took place between Sanskrit and Pali continued to have a tremendous effect throughout the entire history of the development of the Indic languages. However, it is not practical to extend the scope of this study beyond the Early Middle Indic period without sacrificing a thorough and detailed interpretation of one aspect of the language for a more superficial survey of a greater amount of data. It is thus the purpose of this study:

(1) to show how the above-mentioned changes led to restructurings in the verbal system;
(2) to show how certain processes involved in the derivation of verbal forms were reinterpreted to conform to this restructuring;
(3) to consider the theoretical implications of the topics under discussion.

[116] Odden, David Arnold 1981
Advisor: Charles W. Kisseberth

Problems in tone assignment in Shona

In this work, I provide a synchronic grammar of tonal phenomena in the Karanga dialect of Shona, a Bantu language of Zimbabwe. This investigation is taken out within the framework of autosegmental phonology. In the first chapter, I review the literature on tone in Shona, and sketch the morphological structure of the language. In the second chapter, I investigate a number of tonological phenomena which are conditioned in part by word boundaries. I argue that the Elsewhere Condition is a necessary principle of language based of an analytical problem which develops in this chapter. I also argue that rule exception features may be assigned by rule, and demonstrate that the Unordered Rule Hypothesis is falsified by the data of Shona.

In the third chapter, I consider problems which occur in accounting for the tonal rules of nominal prefixes. I argue for an autosegmental treatment of tone, based on a problem of stateability in the Associative Lowering rule. I also argue that the Elsewhere Condition is the only condition which properly assigns a disjunctive relationship between Associative Lowering and Associative Raising. In the fourth chapter, I discuss tonal problems in verbal prefixes. I motivate three central rules which account for the majority of forms, and argue that abstract contoured tones must be allowed at various stages of the grammar to account for violations of the conditions on the three core rules of prefixed tonology. I then discuss how the tone of verbal prefixes can be predicted by reference to morphosyntactic conditions.

In the fifth chapter, I discuss tonal alternations in verbal stems. I discuss the tone pattern of H toned verb stems in assertive verbal forms, and consider a number of analyses which account for this pattern. I then discuss the tone

pattern of nonassertive verbs, and argue there for an abstract tonal melody HHLB, which is associated with the verbal stem. I argue for various refinements of the mapping rule and the rule inserting this tonal melody. Finally, I consider a number of idiosyncratic tonal melodies employed in the perfective, subjunctive, and instrument nominalizations. I attempt to put these melodies in historical perspective with data from other Bantu languages.

[117] Ogura, Masako 1978
Advisor: Jerry Morgan

Roles of empathy in Japanese grammar

The grammatical status of Japanese simplex sentences containing deictic giving verbs, *kureru* and *yaru* 'give,' and motion verbs, *kuru* 'come' and *iku* 'go,' cannot be adequately analyzed by subcategorial or selectional information alone. The speaker's empathy toward participants of events or state described by the sentences plays a crucial role in analyzing these sentences. This dissertation deals with empathy related phenomena appearing in sentences which contain giving and motion verbs.

First, the empathy related principles are formulated based on the concept of relative empathy. These principles are used in the discussions throughout the rest of the dissertation. It is then demonstrated that the choice of the giving verbs, *kureru* and *yaru*, depends solely on the rank between the giver and the receiver of the concreted object or the favor in the speaker's inner feeling empathy hierarchy. It is further demonstrated that the nature of the goal of motion is not sufficient to determine the proper motion verbs in a certain discourse. The rank of the goal in the speaker's empathy hierarchy determines the correct motion verbs when the speaker's location at time of utterance or time of reference is not relevant to the motion.

It is also shown that the choice of the proper giving verbs and motion verbs in the embedded sentences is determined by the speaker's empathy hierarchy and/or referent of the matrix subject's empathy hierarchy, depending upon the nature of the embedded clause and the matrix predicate.

Finally sentences involving double NP deletion from a single clause are observed. By looking into the process of recovering the underlying structure, two separate constraints are proposed, on recovering the underlying structures of clauses which contain empathy verbs and for clauses which do not. A comparison of these two constraints then reveals that empathy hierarchy expressed by the clause is as important as the Universal NP Accessibility Hierarchy in formulating these constraints. It is concluded that the concept of empathy, which is a semantic/pragmatic notion, is an essential element in discussing the structure of sentences.

[118] Okawa, Hideaki 1989
Advisor: Peter Cole

Tense and time in Japanese

This study deals with questions of tense and aspect in present-day Japanese, such as whether Japanese is an aspect language or a tense language or something else, what kinds of temporal relationships there are between the times indicated in the superordinate and subordinate clauses in the complex sentence, and what factors determine the temporal relationships.

Japanese has only two tenses, or tense forms, which are the nonpast tense (a.k.a. the *ru*-form) and the past tense (a.k.a. the *ta*-form) and these two have to play a number of roles. Some analysts contend that the tense forms are aspect formatives which indicate perfective and imperfective aspects. Other researchers, who are the majority, claim that the tense forms, particularly in the subordinate clause, can be tense or aspect. Our position is closer to the latter since we retain the concepts of tense and aspect for Japanese but there is a fundamental difference between the common approach and ours. Our approach sticks to the orthodox definition of tense: whenever tense forms can designate times, they are tense. This definition is accepted by many analysts but is forgotten in their analyses of subordinate tense.

Chapter 1 introduces the two tenses and their basic characteristics.

Chapter 2 examines Kunigiro's Aspect Theory, which claims that Japanese is an aspect language and the two tense forms are aspect markers, even in the simple sentence. We will refute this theory and demonstrate that Japanese embraces both tense and aspect. Our concepts of tense and aspect are a little different from those that have been maintained by most analysts.

Chapter 3 is devoted to scrutiny of the tense forms in the complex sentence. Several works, including traditional and more recent ones, will be introduced and examined. During the course of analysis, our approach will be introduced.

Chapter 4 deals with more basic concepts of tense and aspect. This chapter also mentions major factors involved in determination of relationships between the two times in the complex sentence, such as combinations of tenses, types of conjunctions, types of constructions, and meaning.

[119] Olsen, Margaret S. 1986
Advisor: Georgia M. Green

Some problematic issues in the study of intonation and sentence stress

The two issues examined are: the assumption that there exists an intonation pattern that can be characterized as "normal" or "neutral"; and the issue of whether intonation can have any effect on the form taken by the syntactic structure of the utterance to which it is assigned.

In regard to the first issue, neutral and normal intonation are shown to be two distinctly different types of intonation patterns according to their functions. Neutral intonation is defined as the intonation that is "normally" or "regularly" applied to an utterance, without reference to sentence structure or speaker intentions. It is then shown that neutral intonation cannot exist because stress, an integral part of intonation, is always assigned in a meaningful manner and so intonation must always be meaningful, too. Normal intonation is shown to exist, but it can only be defined in such an inexact way as to render it useless as an empirical standard. In demonstrating this, it becomes clear that neutral/normal intonational form and neutral/normal function are not necessarily found in the same intonation pattern, as has been assumed by others.

In regard to the second issue, it is shown that intonation does indeed have the capacity to influence the shape of the syntactic structure chosen by the speaker in forming an utterance. The primary motivations behind such influence are style and ease of articulation. Speakers will frequently opt to

employ a noncanonical syntactic structure if by using such a structure a more easily articulated or stylistically preferable intonation pattern can also be used.

This dissertation also gives detailed reports of two studies which support the above claims. One of these studies shows that the intonation pattern identified as the "normal" pattern is actually very commonly used and is assigned to utterances of all types and all lengths with significant consistency, thus giving support to the contention that this can indeed be called the "normal" pattern. The second study gives evidence that the judgments as to the semantic equivalency of different types of utterances can be strongly affected by stress placement.

[120] Onn, Farid Mohamed 1976
Advisor: Michael Kenstowicz

Aspects of Malay phonology and tonology

This dissertation is a descriptive study of a dialect of Malay spoken predominantly in the southern State of Johore, in Peninsular Malaysia (JM). It is concerned with synchronic aspects of Malay phonology and morphology. Its two main objectives are first, to attempt to describe some selected variety of phonological and morphological alternations found in the language and to make that description be as revealing of the processes of Malay phonology and morphology as possible, and second, to argue for a difference in status between phonological rules and morphological rules based solely on the facts of Malay. Specifically, the object in the second case is to show that the relegation of morphological rules to a set of "readjustment rules" as proposed in the standard theory of generative phonology (cf. Chomsky & Halle, 1968: 9-11 and 371-372) not only causes some important generalizations to be missed but also is inconsistent with the role played by morphological processes, such as reduplication in languages like Malay.

The discussion of the Malay data is organized into five chapters. Chapter I presents the vowel and consonant phonemes of JM. The distinctive features of the JM phonemes are presented with motivations for their selection. Chapter II discusses some general phonological processes. Of particular interest are the cases of vowel lengthening and vowel reduction, both of which present problems of rule ordering. The discussion on morphology begins in Chapter III focusing first on the morphological structure of the language; later, some general morphological processes, such as affixation, reduplication, and rhyming, are examined. Chapter IV is devoted to a discussion on dialectal variation. Attention is drawn, specifically, to variation that occurs in the process of vowel nasalization, since this presents a case of variation that leads to different ordering of rules in the dialects under consideration. Chapter V discusses the theoretical implications of rule ordering and, in particular, the claim that the application of some phonological rules may be intermixed with morphological rules, such as reduplication (cf. Anderson 1974), is examined. It is argued that in order to capture the generalizations present in the morphophonemic processes, like vowel lengthening, vowel nasalization, reduplication, etc., in a more insightful manner, the theory of generative phonology must be extended. In this regard, the analysis proposed in the present study will demonstrate that the proposals that global rules should be added to the theoretical machinery are fully motivated. Particularly in the analysis of reduplication, the decision to adopt the global rule treatment

eliminates indiscriminate use of rule ordering, and also strengthens the theory which claims that all morphological processes apply before all phonological processes (cf. Wilber 1973, Kiefer 1973, and Cearley 1974).

[121] Ourso, Meterwa 1989
Advisor: Charles W. Kisseberth

Lama phonology & morphology

Lama is a Gur language of the Oriental Subgroup spoken in the districts of Kéran and Doufelgou (Défale´) as a native language. It has received little attention in the field of linguistics and particularly within the framework of generative grammar.

This dissertation is a detailed description and analysis of the interaction between phonological rules and morphological rules in Lama.

The dissertation consists of 5 chapters. The first, introductory chapter locates the language in terms of geographical and typological affinities with the other Gur languages of the Central Gur language family. In Chapter 2, we provide a description and an analysis of the sound system. Of particular interest are the sections on consonant alternation and Advanced Tongue Root (ATR) vowel harmony. Chapter 3 considers syllabification rules in the light of CV-phonology. Chapter 4 gives a detailed account of the general tone rules in the language (high tone spread, contour tone simplification, low tone deletion), and concentrates on the tonal rules of noun morphology. Of particular relevance is the interaction between the tones of noun roots and the tones of noun-class suffixes. Chapter 5 is an analysis of the tonal system in the verb morphology. It is shown that while Meeussen's rule applies in the language generally, its application in noun morphology differs from its application in verb morphology. Another important section in Chapter 5 is the section on the interface between phonology and syntax particularly in the perfective aspect.

[122] Pandharipande, Rajeshwari Vijay 1981
Advisor: Yamuna Kachru

Syntax and semantics of the passive construction in selected South Asian languages

The present study is intended as a contribution to the study of syntax and semantics of the Passive construction in six South Asian languages (i.e., five Indo-Aryan languages — Hindi, Marathi, Nepali, Kashmiri, Punjabi, and one Dravidian language — Kannada). The major points of focus are as follows:

(1) Chapter II describes, compares, and contrasts the linguistic features of the Passive construction in the above languages.

(2) Chapter III examines the adequacy of the definitions of Passive proposed in Relational Grammar (i.e., Johnson 1974, Keenan 1975, Postal & Perlmutter 1974) and points out that (a) relational categories (subject, etc.) are not discrete entities and that their properties vary from language to language therefore, they cannot be treated as the 'foundation' of the syntactic structure of language, and (b) neither subject-demotion nor object-demotion is complete in Passive in the above languages.

(3) In Chapter IV the functions which are performed exclusively be Passive sentences are determined. It is argued with evidence that syntax, semantics,

and pragmatics play a role in determining these functions in the above languages. Evidence is also provided for assuming the existence of the Passive rule in the above languages.

(4) Chapter V points out that exceptions to Passive are regular and systematic across the languages under focus, i.e., they express a volitional act, while verbs which undergo Passive typically express a volitional act. It is claimed that Passive in the above languages may be labelled as a governed rule (Green 1976) since it admits a semantic class of verbs in its structural description. It is also proposed that exceptions can be used as a parameter to define constraints on syntactic rules.

(5) Chapter VI focuses on the syntax, semantics, and pragmatics of the postpositions/suffixes which mark the agent in the Passive sentences in the above languages. The conditions which determine the choice of postpositions/suffixes are discussed.

(6) Finally, theoretical/empirical implications of the discussion of the above topics are discussed in Chapter VII.

This study is also important for the study of (a) the typology of the Passive construction and (b) the hypothesis about 'India as a linguistic area' (Emeneau 1956, Masica 1976).

[123] Patterson, Trudi Alice 1990
Advisor: Charles W. Kisseberth

Theoretical aspects of Dakota morphology and phonology

This thesis investigates some morphological and phonological processes in Dakota, an American Indian language. It attempts to show that recent revisions of and additions to the theories of morphology and phonology will more adequately account for certain problematical processes in Dakota. A recent innovation, Lexical Phonology, is shown to be an effective way to account for the high degree of interaction between the morphological and phonological processes. It is argued that inflectional and derivational morphology are carried out in the same component. Extensions in phonological theory involving the content and internal structure of segments is shown to be of significant value in the construction of certain phonological rules of Dakota. The syllable structure of Dakota is discussed and is shown to be relevant for the characterization of certain morphological processes, specifically reduplication and infixation.

[124] Pearce, Elizabeth Hastings 1985
Advisor: Hans Henrich Hock

Language change and infinitival complements in Old French

This study presents an analysis of infinitival complements constructions in Old French which differ syntactically from their Modern French parallels. The analysis is formulated in the terms of the Government and Binding framework and it has the aim both of accounting for the constructions in question on the basis of the evidence available from textual sources and of providing indications as to the means of describing the subsequent evolution of the constructions.

The material evidence on which this study is based includes the results of an original study of circa 40,000 lines of material from Old French texts. Organized subsets of the data ar displayed in an Appendix.

The analysis distinguishes three types of infinitival complements in Old French. The causative construction in Old French (the type: *il me l'a fait voir* ('he made me see it')), unlike its Modern French counterpart, it is shown as occurring with Impersonal and Order verbs as well as with Causative and Perception verbs. Two non-causative infinitival complement constructions are analyzed and distinguished especially in terms of pronoun placement characteristics, as: *il me viendra voir* ('he will come to see me') versus *il oubliera de moi voir* ('he will forget to see me'). In the former construction, the pronoun complement in its weak form precedes the main verb and, in the latter construction, the pronoun complement in its strong form precedes the infinitive.

The analysis proposes that the construction characterized by the presence of the strong pronoun is to be described as including an S' complement, whereas the constructions with weak pronouns are to be described as including VP complements. It is further proposed that the subsequent evolution of French indicates an increase in the use of S' infinitival complements, with the remaining causative constructions appearing as relic VP infinitival complement types.

The study is divided into two parts: Part One includes a general discussion of the treatment of syntactic change in the Government and Binding framework, and Part Two consists of three chapters devoted to the analysis of the Old French infinitival complements and of comparative data from Modern Romance, especially Italian.

[125] Pingkarawat, Namtip 1989
Advisor: Frederic K. Lehman

Empty noun phrases and the theory of control with special reference to Thai

This dissertation deals with theories and principles that assign referents to empty noun phrases. The major principles are: Control Theory, Binding Theory, and pragmatic principles. These principles are ranked in terms of the order in which they are applied in the attempt to assign an antecedent to an element. This hierarchical order is based on their domains of application.

The control relation is argued to be a local relation. Three types of control relations are proposed: Rigid Control, where no lexical NP can occur in place of a pro, Thematic Control, where only coreferential lexical NPs can occur in place of a pro, and Non-rigid Control, where lexical NPs can occur without restriction.

The principle of Argument Inheritance is proposed to account for the coreferentiality of the arguments in the adjunct *hau*-clauses with those in the matrix clause. The adjunct *hau*-clauses inherit the argument structures from the matrix clauses. The principle of Argument Inheritance is distinguishable from the Control Theory in several respects.

[126] Pyle, Charles Robert Jr. 1971
Advisor: Charles W. Kisseberth

On the treatment of length in generative phonology

This thesis can be viewed as the initial step in an attempt to determine the validity, or more precisely, the initial step in an attempt to determine what the correct explanation of the dual behavior of long segments is.

The first step in this undertaking is to determine the range of ways in which long segments can manifest this dual behavior. Until recently it has been presupposed that the permutations are very simple. The usual assumption is that some languages have one representation exclusively and others have the other exclusively. In other words, in a given language long segments act uniformly either like clusters or like single segments throughout the language. This view was called into question by Michael Kenstowicz in his dissertation on Lithuanian phonology, the relevant parts of which were later published in the form of a paper entitled "On the Notation of Vowel Length in Lithuanian." (Kenstowicz, 1970). He argued that long vowels in Lithuanian act both like single segments and like clusters, which clearly invalidates the usual assumption. Once it is clear that this position must be abandoned, we must attempt to ascertain the range of possibilities which a theory of length must account for. In Chapters I and II, we pursue this issue. In Chapter I, we discuss in some detail the behavior of long vowels in West Greenlandic Eskimo (W.G.). We show that long vowels, as in Lithuanian, act both like single segments and like clusters in W.G., then we consider two relatively simple theories which one might propose to explain the behavior of length and argue that they are inadequate on the basis of data from a variety of other languages. Chapter II is devoted to establishing that long consonants also exhibit this dual behavior in a single language, namely Amharic. We argue that the two theories considered in Chapter I, are also incapable of accounting for the behaviour of long consonants. In the course of this argument, we have occasion to discuss some of the complexities of long consonants in other languages.

Having acquired in the first two chapters a general idea of the capabilities which an adequate theory must have, in Chapter III we take up several topics of relevance to determining what this theory is like. First, we propose that three types of processes naturally treat long segments like single segments which, if true, ought to be explained by the theory of length. Second, we examine three possible theories, which superficially seem to be reasonable possibilities. We argue that two of them are inadequate largely on the basis of the fact that they assume that there is one length feature, which we show to be necessary for a natural explanation of certain alternations. Third, we propose the hypothesis that all length alternations are accounted for by feature changing rules. And, finally, we suggest that the dual behavior of long segments is only one facet of a much more general phenomenon.

[127] Radanovic´-Kocic´, Vesna 1988
Advisor: Hans Henrich Hock

The grammar of Serbo-Croatian clitics: A synchronic and diachronic perspective

This dissertation represents an analysis of Serbo-Croatian clitics from both synchronic and diachronic perspectives.

Serbo-Croation clitics are second-position clitics and include auxiliaries, pronouns, and sentential particles.

The major issues addressed in the synchronic analysis include: the definition of clitics, the origin of clitics and their underlying position, placement of clitics, the definition of 'second position', and the formulation of Clitic Ordering filter.

The most important outcome of this analysis is the treatment of clitics as a phonological phenomenon and statement of their placement in terms of the prosodic structure of the utterance. Such an analysis makes it possible (1) to distinguish clitics from other elements which appear stressless at the surface level, by defining clitics as words which lack stress at the underlying phonological level; (2) to account for the fact that clitics display characteristics of both independent words and affixes, by showing that clitics behave as independent words at the syntactic level, while the feature [+clitic] has relevance only at the phonological level; (3) to explain why words which belong to different syntactic categories exhibit identical surface behavior, by showing that their peculiar placement in the clause is a result rather than a cause of the fact that they are all clitics; (4) to define 'second position' in terms of prosodic structure.

The major goal of the diachronic analysis is to show how simple clitics (belonging to VP and enclitics on V) became special clitics (belonging to the clause and stucking up in second position). The evidence of various phases of Serbo-Croation history suggests the following hypothesis: From V-initial structures in which sentential clitics (particles, SC) were followed by the verbal enclitics (VE) the clause second order SC-VE was generalized to all other structures. As a consequence, the category of phrasal clitics was in fact eliminated. The only remaining phrasal clitic, the possessive dative, therefore was likewise given up.

[128] Ransom, Evelyn Naill 1974
Advisor: Jerry Morgan

A semantic and syntactic analysis of noun complement constructions in English

In this thesis I will try to show the necessity of analyzing certain noun complement constructions in terms of 1) the meanings of the embedding predicate and 2) the modalities of the complement. It is only in this way that one can adequately describe the similarities and differences in the meanings of the constructions and in the restrictions on them. The meanings of the embedding predicate are sketched only to the extent needed for discussing certain restrictions: the distinction between performative and nonperformative, between acts and events, and states and evaluations, and between emotive and nonemotive.

The basic modalities distinguished are power, occurrence, truth and future truth. Each of these is divided into necessity or possibility.

The restrictions on the constructions have to do with the type of complement subject and predicate required, the range of complement negation, and the choice of that or infinitive complementizers.

[129] Riddle, Elizabeth Marion 1978
Advisor: Jerry Morgan

Sequence of tenses in English

The main thesis of this dissertation is that Sequence of Tenses (SOT) is not an actual rule of English grammar. I argue that the deep and surface structure tenses are the same in cases formerly thought to be examples of SOT. This is done on the basis of a study of the contexts in which the past and present tenses occur in both main clauses and SOT environments. Pragmatic factors, including the speaker's purpose in uttering the sentence determine tense selection. The speaker may choose the past tense over the present to avoid conveying certain implications associated with the use of the present tense, which would be misleading or superfluous to the intended communication.

I also argue that the past tense means only 'true in the past' in some possible world. The notion 'no longer' true is conversationally implicated rather than entailed. I show that the same factors condition tense selection in main clauses and SOT environments. This allows a unitary treatment of "normal" and "deviant" uses of the past tense in all types of structures, thus eliminating much of the need or desirability of a rule of SOT.

Finally, I argue against a claim that SOT is ordered after Raising in the cycle to prevent it from applying in raised structures. Such an ordering statement assumes that SOT is a rule. As part of my evidence against the rulehood of SOT, I show that tenseless/verbless structures have a different discourse function from tensed clauses. From there, I argue that infinitives (as well as other tenseless/verbless structures) are not marked for tense underlyingly. I support Smith's (1976) claim that the *have* which occurs in infinitives is a relational element indicating anteriority rather than a tense. It is suggested that the occurrence of *have* is pragmatically conditioned. *Have* occurs underlyingly only in those infinitives where the temporal relationship between the higher and lower verbs is not inferable. The import of these conclusions is that SOT in infinitives is ruled out on grounds other than ordering, and so there is no reason to consider it a syntactic rule of English.

[130] Rose, Kenneth Richard 1992
Advisor: Yamuna Kachru

Method and scope in cross-cultural speech act research: A contrastive study of requests in Japanese and English

The Cross Cultural Speech Act Realization Project (CCSARP), the most ambitious speech act research to date, focused on western languages and cultures and employed questionnaires in data collection. The results showed conventionally indirect requests to be the most favored for all languages studied, and hints the least frequent. Japanese interaction is said to be hearer-oriented, thus vague and indirect, so a study of requests in Japanese should reveal a greater preference for hints. However, since questionnaires do not reflect the negotiated nature of actual interaction, they may not be a valid means of data collection in Japanese. To address these issues, a discourse completion test (DCT) and a multiple choice questionnaire (MCQ) were administered to speakers Japanese and English. The DCT showed Japanese to be more direct than Americans. There were also significant differences between the DCT and MCQ results for both languages. Both groups chose to forego requests more frequently on the MCQ than on the DCT, and Japanese also chose

to hint more frequently on the MCQ than on the DCT. These results argue against the use of elicited data, particularly in non-Western contexts.

[131] Rosenberg, Marc Stephen 1975
Advisor: Jerry Morgan

Counterfactives: A pragmatic analysis of presupposition

Logical properties of verbal predicates have been of interest to linguists working in the generative framework since the observation by Kiparsky and Kiparsky that complementizer factive predicates (e.g. *regret, be aware*) which are judged to cause their embedded complements to be presupposed to be true, and counterfactive predicates (e.g. *pretend*) which are judged to cause their embedded complements to be presupposed to be false, are analyzed.

Work by linguists such as the Kiparskys, Karttunen, Keenan and Morgan is discussed and two types of definitions of presupposition are analyzed: semantic or logical definitions which are based on formal language definitions by logicians such as Van Fraassen, and pragmatic definitions which view presuppositions of both types are found to be deficient in rigorously accounting for the presupposition judgments made by speakers of natural languages. No comprehensive definition is formulated. Rather, a rule of thumb is proposed.

Three classes of predicates which have been termed factive in the literature are investigated: (1) cognitive predicates which attribute mental attitudes to people and which are non-specific as to information source (e.g. *know, be aware*); (2) sensory verbs which report sensory events and states (e.g. *see, taste, sound*); (3) emotive predicates which report emotional states and reactions. The presupposition judgments associated with these three classes of predicates are explained by pragmatic principles reflecting speakers' knowledge of the conventional use of language and of the normal workings of the world. Three pragmatic principles are formulated: The Principle of Complete Knowledge (PCK), that people are expected to know certain things about themselves; The Principle of Sensory Information (PSI), that sensory input is normally taken to be accurate; The Principle of Emotional Reaction (PER), that emotional reactions occur as responses to real states and events (not imagined or hypothetical ones). These principles and Gricean maxims of conversation offer explanatory accounts of the presupposition of factives. Presupposition judgments are normal judgments but not necessary ones. Misrepresentation and knowledge based on error are possible. Lexical representations of factive lexical items which include presupposition features are shown to be inadequate. Evidence from several languages (Hidatsa, Papago, Spanish) is given in support of a conception of presupposition as part of a more universal phenomenon in language: the existence of grammatical mechanisms for providing hearers with information about a speaker's conviction to the truth of matrix and embedded propositions.

Pretend as a putative counterfactive predicate is discussed, and it is argued that a logical account of *pretend* as a predicative containing an incorporated negative is incorrect. Claims that speakers systematically vary in their interpretation of *pretend*-sentences according to parameters described logically (internal vs. external negation, entailment vs. presupposition) are shown to be incorrect based upon two informant surveys (N=64). An explanation of informant variation in terms of contexts imagined during the

judging of sentences is advanced in support of the non-homogeneous dialect classes found.

The investigation of lexical counterfactivity is continued with reference to data from Toba-Batak (Sumatra) and Chinese. It is shown that putative counterfactives in these languages are better characterized in pragmatic terms than in logical ones. A paragon hypothetical counterfactive in English is discussed and it is argued that surface disparities resulting from opposite patterns of negatives for factive-containing and counter-factive containing sentences could not be tolerated by a natural language whose purpose is to permit efficient communication.

[132] Rugege, Geoffrey 1984
Advisor: Eyamba G. Bokamba

A study of Kinyarwanda complementation

The purpose of the study is to provide a detailed description of the Sentential Complement Structure of Kinyarwanda, a Lake Bantu language spoken in Rwanda, Uganda and Eastern Zaire around the shores of Lake Kivu.

In addition to providing a description of the basic complement structures of the language, the thesis deals with two theoretical problems. The first problem concerns the question of whether complementizers are to be represented in the deep structure or whether they are to be introduced by transformation. Evidence from the data we have presented suggests that, since complementizers have semantic content in this language, they must be in the deep structure.

The second problem that is investigated here concerns the effect of movement rules like Raising on complement structures. It is shown that movement rules violate Island Constraints, in the sense of Ross (1967). This apparent violation of Ross' Constraint is explained in terms of language typologies, Kinyarwanda belonging to that group of languages that violate Ross' Constraint.

[133] Russell, Dale William 1987
Advisor: Jerry Morgan

Cheyenne verb agreement in GPSG

This is an analysis of the verbal agreement system of Cheyenne, a member of the Algonquian family of Amerindian languages, in terms of the Generalized Phrase Structure Grammar (GPSG). Agreement in this theory works by a mechanism of feature matching among nodes of a tree diagram which represents the structure of units of the language, either words or individual morphemes.

A necessary prerequisite for such a treatment is a reanalysis of what have previously been called directionality markers, as instead marking the person and grammatical relation of one argument of the clause. In addition, the marking function of each verbal agreement affix is formulated explicitly, in terms of features, to provide a precise mapping from the agreement features at the level of the word to lexical features which occur on the nodes of the agreement affixes themselves.

The internal structure of the word is then described by rules analogous to the rules of syntax describing the structure of sentences. In particular,

Feature Instantiation Principles license the occurrence of features on nodes of the trees of word structure just as they do for sentence structure. It is seen to be the Foot Feature Principle of GPSG that plays a crucial role in an account of verb agreement.

Also within the word, rules of Linear Precedence determine the order of the elements of the word. This is true not only in trivial ways, such as the ordering of prefixes before stems, but also in ordering morphemes according to features of person, number, animacy, and obviation. This, along with the reanalysis of directionality markers, provides a re-interpretation of the Algonquian person-animacy hierarchy, in terms of left-to-right order rather than logical precedence.

The account of verbal agreement given here thus provides evidence for rules of syntax operating within the word, with the morphological component viewed as a word-syntax.

[134] Saciuk, Bohdan 1969
Advisor: Henry R. Kahane

Lexical strata in generative phonology (with illustrations from Ibero-Romance)

The purpose of this dissertation is to study the role that the different components of the lexicon play in generative phonology, and to sketch a proposal for dealing with these phenomena.

Previous treatments of this aspect of phonology are reviewed and their relevant observations are incorporated into the theory proposed here, but the present proposal is based to a large extent on data from three Ibero-Romance languages — Spanish, Portuguese, and Catalan. I have drawn most heavily from Spanish and least from Catalan. This is due in part to the existence of several studies of Spanish done in the framework of generative phonology.

Although most of the data from these Ibero-Romance languages would be the same for the majority of their dialects, the examples given here are transcribed according to the pronunciation of Standard Mexican Spanish, the Paulista dialect of Portuguese, and the Oriental dialect of Catalan.

It is assumed that the reader of this work is acquainted with the theory of generative phonology as exposed in Chomsky & Halle, *The Sound Pattern of English* (1968), Postal, *Aspects of Phonological Theory* (1968), and in Chapter 1 of McCawley, *The Phonological Component of a Grammar of Japanese* (1968). For this reason, this dissertation does not contain an Introduction that would explain the precepts of generative phonology.

[135] Sadock, Jerrold M. 1968
Advisor: Henry R. Kahane

Hypersentences

This thesis deals with part of a model of human linguistic capability. In each of the first three sections I will present evidence which demonstrates the necessity of assuming a different sort of abstract constituent in deep structure which differs in some rather striking ways from most other underlying constituents. In the first place, each of the constituents for which I will argue is entirely abstract in that no surface structure form is ever directly traceable to any of these underlying constituents. Secondly, they are all odd in that the

relationship which they bear to the rest of the deep structure is not at all obvious. All that seems clear is that these constituents must be outside of the remaining sentential structure. Finally, they differ from other abstract grammatical entities in that they are either universally present or, at least, are universally possible. There exist arguments that they are to be postulated as occurring in the underlying representation of every sentence of every natural language. This conclusion will follow from a simplifying assumption about these three different sorts of constituents which will be presented in the fourth section. The remainder of the thesis will be concerned with providing a more detailed theory through the investigation of some of the predictions which the theory makes and subsequent modification of the theory to make it conform to the data which are available from human languages. These modifications will in general involve an increase in the specificity of the theory.

[136] Saltarelli, Mario Donato 1966
Advisor: Robert B. Lees

A phonology of Italian in a generative grammar

This is intended as an introduction to the study of Italian pronunciation. It covers briefly the XVI century descriptivists, the XIX century historical phonologists, the phoneticians, phonemics and normative grammar. Although the material is intended to be comprehensive, critical attention is paid to works of insightful support to the proposal made in the dissertation. Chapter I serves as an introduction to studies on Italian pronunciation. Chapter II is designed to pave the way for the grammatical formulations proposed in Chapter III.

Chapter III provides the phonological component of a grammar of Italian. It includes most of the morphology, morphophonemics, and general phonological processes. The framework for the phonological description adopted is a distinctive feature theory as proposed by Halle in *The Sound Pattern of Russian* (The Hague, 1959). Since a substantial number of the rules of phonology are formulated on phrase-structure, a sketch of the syntactic bases has been developed as a separate work by the author and is assumed in this dissertation. The syntactic analysis accepts, in general, the generative-transformational view of description in the form proposed in N. Chomsky's *Aspects of the Theory of Syntax* (Cambridge, 1965).

[137] Schaufele, Steven William 1991
Advisor: Hans Henrich Hock

Free word-order syntax: The challenge from Vedic Sanskrit to contemporary Formal Syntax Theory

Vedic Sanskrit, the early Indo-European language spoken by the Aryan invaders of India in the 2nd millenium B. C. E., is a language showing little if any evidence for levels of syntactic organization between that of lexical items and that of maximal projections of those items. But the large corpus of Vedic literature does show evidence that Vedic grammar routinely generated NPs, PPs, and VPs into which words were organized.

On the surface, however, this heirarchical organization is obscured by the ease with which Vedic grammar generated discontinous constituents. Most of the discontinuities in the Vedic grammar generated discontinuous

constituents. Most of the discontinuities in the Vedic corpus result from phenomena common to a wide variety of languages, e.g., topicalization, pronominal fronting, particle placement, and focussing, which in Vedic are defined in such a way as to encourage discontinuity. In addition, phrases, insofar as they partook of nominal character, were defined by the grammar as 'scramblable', i.e., they could be freely discontinuous within their mothers without such discontinuity apparently needing any pragmatic justification other than the language-user's mere desire to take advantage of the options allowed by the grammar.

An attempt is made to develop consistent descriptions of Vedic discontinuity in each of two formal syntactic theoretical frameworks, the Revised Extended Standard Theory also known as Government & Binding or Principles & Parameters Approach (PPA), and Lexical-Functional Grammar (LFG). The PPA analysis is hampered by constraints built into the theory as a result of the study of languages with stricter constituent-order such as English, to the point that violence needs to be done to either the data or the theory. On the other hand, LFG proves capable of describing every attested clause with little difficulty, but appears to be no more capable than PPA of explaining why certain logically possible constituent orders occur very rarely if at all. Suggestions are offered for further research in the areas of both theory and fieldwork.

[138] Schmerling, Susan Fred 1973
Advisor: Charles W. Kisseberth

Aspects of English sentence stress

This dissertation is organized into six chapters. The first discusses the approach to sentence stress of Chomsky & Halle (1968) and that of two of their precursors, Newman (1946) and Trager & Smith (1951). Following a review of the different approaches and the claims made by the various authors, a detailed critique of the cyclic treatment of Chomsky and Halle is presented, in which it is shown that such a treatment is unmotivated and beset with serious difficulties. Chapter II is a review and critique of more recent approaches to sentence stress by Joan Bresnan and George Lakoff and a third approach, by Dwight Bolinger, which, while not new, has only recently become widely known to generative grammarians. Chapter III is a discussion of a concept which has received little serious discussion but has been extremely important in discussions not only of stress itself but also of syntax, the concept of "normal stress". It is shown in this chapter that this notion is one which is incapable of characterization in any linguistically significant way and thus that treatments of stress (and other phenomena) which depend on it are without empirical basis. The "positive" chapters of this dissertation are Chapter IV, where the question of what items in an utterance are assigned stress is discussed, and Chapter V, which deals with relative stress levels. Chapter VI contains a summary and polemics.

It is the thesis of this work that sentence stress assignment is governed by several different principles of different natures. Some of these principles are outside the scope of any current theory. Consideration of sentence-stress phenomena indicates, then, that it is impossible to view all phonological rules as belonging to an "interpretive" component of the grammar. Their relationship between the pronunciation of a sentence and other properties is as complex, and as deserving of respect, as the relationship between the

"meaning" of a sentence and other properties, and we are still very far from having an adequate theory of linguistic competence.

[139] Schwarte, Barbara Sue 1981
Advisor: Michael Kenstowicz

The acquisition of English sentential complementation by adult speakers of Finnish

The study reported on here was an investigation into the acquisition of English sentential complementation by adult native speakers of Finnish. A written test consisting of six production tasks and a small comprehension section was administered to forty-three Finnish students studying English at the University of Jyvaskyla, Finland. The production tasks covered nineteen aspects of complementation, which were classified into thirteen subcategorization categories and six syntactic categories. There were three administrations of the test over a nine-month period.

The analysis of the data consisted of two parts. The first part was a cross-sectional analysis to determine the invariant hierarchy of difficulty for the nineteen complement categories. To determine the hierarchy of difficulty, the ordering-theoretic method developed by Bart and Krus (1973) was utilized. The cross-sectional hierarchy of difficulty determined for the Finnish speakers in this study was then compared with the cross-sectional hierarchy of difficulty determined for Puerto Rican Spanish speakers in a study by Anderson (1976).

The second part of the study looked at the students' use of complement structures over a nine-month period. Longitudinal data were compiled for twenty-three of the students. For these twenty-three students, individual rankings of the nineteen categories, based upon the percentage correct, were made for each testing. The ranking obtained on each testing for a student were then compared with each other to determine if there was much variation in a student's ranking from one testing to the next. An analysis was also made to determine if there was much variation when one student's longitudinal ranking was compared with another student's longitudinal ranking. Finally, the individual longitudinal rankings were compared with the cross-sectionally-derived hierarchy of difficulty to determine if the individual longitudinal rankings corresponded with the cross-sectionally-derived hierarchy of difficulty.

The most important findings of this study were 1) the existence of variation in the second language acquisition process and 2) the fact that such variation was obscured by the cross-sectional group data. It was found that over time there was a great deal of variation in the individual rankings; that is, the rankings for a student changed from one testing to the next. Not only was there variation over time for individual rankings, but there was also variation when one student's individual longitudinal ranking was compared with the other students' individual longitudinal rankings. Thus, the language learning process seems to be very individualistic.

[140] Scorza, Sylvio J. 1972
Advisor: Ladislav Zgusta

Indirect discourse and related phenomena in Xenophon

The Latin name *oratio obliqua* and its English counterpart, indirect discourse, have reference to a link between the construction so named and

some speech act. The syntactic structure, however, and the choice of lexical items for sentences embedded in either direct or indirect discourse are generated by the speaker purporting to make a report on someone's speech or thought. The extent of the adherence is entirely dependent of the capability and the desire of the reporter to produce a sentence similar in lexical items and syntax to the one he claims to reproduce. His claim, therefore, is technically a pretense, but it is acceptable, for we know the circumstances under which all such claims are made.

Certain other phenomena, formerly excluded from the range of indirect discourse, are treated by the user of the language under the same syntactic rules and thus are shown to be part of a larger category of constructions relating to indirect claims of reported speech and thought.

Rules of indirect discourse in ancient Greek produced transformations in the mood of the embedded verb, to an optative, and infinitive or a participle. Selectional restrictions of the verb of discourse determined which change, if any, took place. In some embeddings the case of the subject was also liable to change. An area of distinction between indirect and direct discourse was in the determination of person assignment. Only the former depends on identity tests with the noun phrases of the hypersentence.

Many of the transformations for embedded questions are determined by the same rules as for embedded declarative sentences. Yes-no questions are subject to a rule introducing a special conjunction, and other questions using interrogative pronouns and adverbs may find their question work made into the equivalent relative.

If the theory of a deleted hypersentence of communication at the highest node of every sentence can be accepted, including the idea that the NPs of the reporter and the hearer start out without person assignment, then the basis of direct and indirect discourse must be the embedding and reembedding of such sentences under new hypersentences.

Some sentences which are embedded in English, including most of the sentences of discourse, have in the past been theorized to have an it-S option. In the Greek of Xenophon the alternative appears to be between a demonstrative pronoun and S.

It has often been demonstrated that adjectives ought to be included with verbs, but nouns of verbal derivation are more of a problem. They function as subjects and objects in sentences, yet they can also take a direct object themselves. This dissertation illustrates their further use as verbs of discourse.

[141] Sellner, Manfred Bernhard 1979
Advisor: Jerry Morgan

Towards a communicative theory of text

This dissertation studies the textual function of language. A theory of text is identified as one that specifies all the acceptable, usable texts of language.

The purpose of Chapter I is to contrast the doctrines of generative-transformational theory to the assumptions that underlie this textlinguistic study. These are identified as the act-view of language that sees language as activity of speakers/writers with a purpose and recipients as individuals that try to find out what was in their heads.

Chapter II starts out with a *Grundlagendiskussion* of observations that a comprehensive theory of text will have to account for. These observations are set in relation to several "text-models," which are shown to be in need of revision. Finally, I characterize a "rational," and "non-absolute" position on textuality.

Chapter III is an analysis of the communicative function of the agentless "werden"-passive in German. This analysis is performed under the assumption that speakers/writers act "rationally" and that they choose the form that best suits their intentions. In the course of this study, several ways of exploitation are identified which are then contrasted to the exploitation of man by speakers and writers of German.

Chapter IV gives a statement of the major findings of the dissertation, as well as its shortcomings. The conclusion is that the passive is used for more than one function and that there is indeed one context that can support the claim of a substitutional relationship of passive and man.

[142] Sereechareonsatit, Tasanee 1984
Advisor: Frederic K. Lehman

Conjunct verbs and verbs-in-series in Thai

This dissertation deals with two general types of verb phrases in Thai: conjunct verbs and verbs-in-series. Conjunct verbs in Thai have received little attention in previous works; the classification and analysis of conjunct verbs in this study is, therefore, primary. I conclude that all conjunct verbs function like verbs and are most adequately treated at the lexical level.

In Thai, verbs-in-series appear as two different types of constructions: serial verbs and compound verbs. Serial verb sequences can have any of the following interpretations: sequential, purposive, unordered, and simultaneous. A preferred interpretation is determined by considering the semantic information and the speech context. The shared subject constraint holds in all cases of serial verbs in Thai.

I present a classification of compound verbs in Thai. Four types of these verbs — directional compound verbs, culminative compound verbs, modal compound verbs, and aspectual compound verbs — are analyzed.

[143] Sheintuch, Gloria 1977
Advisor: Jerry Morgan

Same rule in a transformational theory of syntax

This dissertation is concerned with the assessment of the significance of the notion "same rule" for syntactic theory. Several possible interpretations of and explanations for the notion "same rule" are examined, and the range of the interpretations is narrowed down, such that assuming a general framework of Transformational theory of syntax constrained by considerations of language acquisition which is assumed to be, to some degree, innately controlled, "same rule" is taken to represent a "significant generalization" in the grammar internalized by a speaker.

The intuitively-based criteria involving similarities and differences in properties of rules, used by linguistics for decisions about the sameness of two rules (within a given language) which are identical in some properties, but different in others, are examined. It is found that the various criteria can be

ordered in terms of a hierarchy of predominance relationships in determining rule "sameness", and how rules can differ from each other.

It is argued that the interpretation of "same rule" as a significant generalization in the grammar of a speaker cannot make sense across two or more languages, if one does not assume that the "same rule" is an innate universal — that is, that there exists a universal inventory of rules from which each language draws some subset, serving as a constraint on linguist theory.

The hypothesis of "innate inventory of universal rules" is assessed in the light of some cross-linguistic works reviewed in this dissertation. It is found that none of the works come up with some formulation of a universal rule that can be empirically validated against the diversity of natural languages. Also, it is found that the criteria used by linguists to determine cross-linguistic "sameness" or universal rules are arranged in a hierarchy that is the inverse of that for language-internal analysis. Other deficiencies of the hypothesis are pointed out: the substantive constraint in terms of universal inventory of rules is redundant to certain formal constraints, is unable to constrain the grammar sufficiently, and implies that there are no generalizations among the universal rules, so that it does not call for explanations for why certain rules, and not others, are possible in grammars.

In conclusion, it is suggested that the current conception of "universal rule" is a dubious notion, and that some new kind of constraint — a universal predominance hierarchy of properties in which rules can differ, if developed adequately, could restrict the power of Transformational theory in a more significant, efficient, and descriptively adequate manner than a universal inventory of rules.

[144] Shell, Robert Larry 1972
Advisor: Georgia M. Green

The analysis of cleft and pseudo-cleft sentences in English

This work is divided into eight chapters. In Chapter II the cleft sentence construction is compared to a construction which is outwardly similar to it. This chapter is not a critique of a previously proposed analysis of the cleft sentence construction, but rather serves to demonstrate some of the unique characteristics of this construction which differentiate it from a similar looking construction. Chapter III discusses an analysis of the cleft sentence construction which was proposed in Lakoff (1965). Many of the defects of this analysis are seen to be the same ones that are found in the analysis presented in Chapter II. In Chapter IV the cleft sentence construction is compared to another outwardly similar construction. Again, the purpose of this chapter is not to criticize a previously proposed analysis of the cleft sentence construction, but rather to show some additional characteristics of this construction. In Chapter V reasons are given for believing the cleft sentence construction to be closely related to another construction — the pseudo-cleft sentence. In Chapter VI I discuss the nature of the subordinate clause of the pseudo-cleft sentence construction and present an analysis of cleft and pseudo-cleft sentences which overcomes some of the problems of previously proposed analyses. Chapter VII deals with the analysis of the cleft and pseudo-cleft sentences presented in Chapter VI. Chapter VIII points out various problems that are yet to be solved.

[145] Shim, Seok-Ran 1991
Advisor: Chin-Wu Kim

Word structure in Korean

The purpose of this study is to investigate the nature of morphological structure of words in Korean and to examine the interaction of morphological properties with other components of grammar. In order to provide the adequate model for word structure of Korean, I adopt a morphological model which is proposed in recent developments in morphology (e.g. Lieber 1980, Williams 1981; 1981a, Selkirk 1982, Di Scuillo & Williams 1987). In this morphological model, some syntactic notions, such as certain notions of X-bar theory, a head of a word and argument structure are extended to the theory of word structure.

Chapter 2 gives an overview of word formation models proposed within the framework of the lexicalist theory. Several word formation models of Korean are examined. This chapter also introduces some of major theoretical assumptions upon which the analyses given in this study depend.

In Chapter 3, the morphological properties of compounds in Korean are discussed. Two different sets of primary compounds are compared and the difference between them is argued to be attributed to the different word structure. The analysis of synthetic compounds is also given. It is shown how the word structure model which incorporates the Argument Linking Principle proposed by Lieber (1983) allows an adequate account of synthetic compounds. Finally, it is argued that the difference in internal word structures can make predictions on Sino-Korean tensification.

Chapter 4 discusses the morphology of passive, causative suffixes, nominalization and the negative morpheme *an*. An attempt is made to provide the lexical representations of passive and causative morphology using the notion of conceptual structure proposed by Jackendoff (1987). By providing the lexical representations of passive and causative morphology, it is claimed that the coincidence of affixal forms can no longer be regarded as a total accidental phenomena. The distinction between the gerundive *um* and *ki* is discussed. The morphology of negative morpheme *an* is also examined. It is shown that the difference in meaning between two negative types can make predictions about cooccurrence restrictions of the two negative versions.

Finally, Chapter 5 summarizes the topics discussed and examines some consequences and implications.

[146] Silitonga, Mangasa 1973
Advisor: Georgia M. Green

Some rules reordering constituents and their constraints in Batak

This study is an attempt to describe reordering transformations and their constraints in Batak. Not all reordering transformations will be discussed here and I will restrict myself to the investigation of chopping rules.

The study is devoted to the justification of the claims about the order of constituents on the deep structure of Batak. I would like to claim the following:

(1) Batak has predicate-first word order as opposed to predicative-second word order, and

(2) at least the reordering rules discussed here should operate on VOS order.

In my attempt to justify (1) and (2) I would like to introduce and discuss briefly the following rules: Topicalization, Passive and Relative Clause Formation. For a better exposition of the syntactic phenomena that I am going to discuss below, I assume the correctness of (1) and (2).

[147] Skousen, Royal 1972
Advisor: Charles W. Kisseberth

Substantive evidence for morphological and phonetic regularities in phonology

In this work, I will consider whether there is any substantive evidence for the principles of unique underlying representations and phonetically-plausible rules. I will examine various examples of morphological alternation from English, French, and Finnish and show that in these cases the traditional generative phonological solutions are incorrect.

In the following chapter, I discuss the notion of substantive evidence more fully and give examples from English to show how substantive evidence can be used to determine which regularities are captured by speakers. In chapter 3, I deal with the French verb system and argue against the traditional generative phonological analyses that try to account for vowel alternations in irregular verbs by postulating unique underlying vowels and phonetically-plausible rules (which look like the original historical rules). In chapter 4, I consider three putative rules in Finnish that every generative phonologist who has worked on Finnish has postulated and show that there is no substantive evidence for these rules. In chapter 5, I consider the illative suffix in Finnish and argue that several analogical changes show that certain historical, phonetically-plausible rules are no longer captured by speakers. In each of these chapters, I will show that there is substantive evidence for rules that relate surface forms to each other. In these cases, substantive evidence indicates that speakers account for morphological alternation by means of surface patterns of alternation. In chapter 6, I consider the conditions under which speakers fail to capture phonetically-plausible regularities. And finally, in chapter 7, I discuss various attempts to limit the abstractness of generative phonological solutions on the basis of substantive evidence.

[148] Smith, Jesse Robert 1971
Advisor: Hans Henrich Hock

Word order in the older Germanic dialects

Throughout this study I will consider word order to be a feature of grammar which is neither completely free nor completely fixed. Complete freedom of word order would mean, among other things, what every possible order was equally meaningful for every sentence and, therefore, that order was completely non-significant. A rigidly fixed word order would mean that a given set of grammatical circumstances would require a definite word order and that no other order was possible. Neither of these situations exists in the Germanic dialects studied here. What does seem to be the case is that for every set of grammatical circumstances there is a most expected order which will be called the unmarked order. When this order is used no special emphasis or attention is called to the elements of the sentence. For the same set of

grammatical circumstances there are one or several alternate orders possible which do focus attention upon specific elements or upon the sentence itself. Such orders will be called marked orders.

One of the basic assumptions on which this thesis stands or falls is that the one crucial feature of sentential word order is the position of the verb alone. The position of the verb, then will serve as the basic determiner of word order pattern classification in this study. An examination of the documents of the ancient Germanic dialects reveals that four types of word order patterns will suffice to classify all sentences encountered. The verb may be in initial position, second position, third or later non-final position, and final position.

[149] Soheili-Isfahani, Abulghasem 1976
Advisor: Yamuna Kachru

Noun phrase complementation in Persian

The goal of writing this dissertation is to present a syntactic as well as a semantic analysis of some major aspects of NP complementation in Persian. We begin the discussion with a brief introduction to classification of Iranian languages, approaches to Persian syntax, and a review of the earlier research on NP Complementation in Persian.

We review the earlier research conducted by Iranian and non-Iranian scholars on the phenomenon of NP Complementation in Persian. The review shows that while it is generally accepted by both traditionalists and transformationalists that a noun phrase complement forms part of the predicate, there is no consensus among the researchers as to whether it is generated underlyingly in pre-verbal or post-verbal position. Obviously, this controversy has developed as a result of adopting the transformational approach which, based on the underlying assumption of its goal of linguistic inquiry, deals with two levels of representation in the treatment of NP Complementation in Persian. This controversy is pursued in the transformational analyses of Persian Complementation presented by Moyne-Carden and Tabian. In this study, we take the position that NP complements in Persian are generated pre-verbally in the underlying representation.

[150] Sohn, Han 1976
Advisor: Chin-Chuan Cheng

A cineradiographic study of selected Korean utterances and its implications

The general purpose of this study is to reveal and quantify the physiological activities of the vocal tract during the articulation of the three types of Korean stops (tense unaspirated, lax slightly aspirated, tense aspirated) at three different points of articulation at a normal conversational speed, to see how well the various articulators serve to separate the Korean stop categories.

It may be noted that most investigators have been concerned with coarticulatory configurations of articulators such as the tongue (the most important supralaryngeal articulator) and the lips, jaw, velum, pharynx, etc., for both meaningful and meaningless phoneme sequences, but restricted in length to that of an isolated syllable. The general finding has been that there is considerable forward coarticulation between adjacent phones, with the degree of coarticulation apparently dependent upon the rate of utterance,

phonetic structure, and, more tentatively, syllabic structure and the position within a word.

Specifically, this study attempts to analyze the following:

(1) the phonetic nature of the Korean stop consonants;
(2) the relevance of various phonological features: e.g., tense/lax, aspiration, heightened subglottal pressure, etc.;
(3) the physiological correlates of the concept "word boundary";
(4) utterance-initial phenomena;
(5) comparison of the findings of this study with others; and
(6) various aspects of the theoretical implications of the results.

[151] Sohn, Hyang-Sook 1987
Advisor: Michael Kenstowicz

Underspecification in Korean phonology

It is the purpose of this work to argue that the uniqueness of a sound is characterized by some, not all, distinctive features, departing from the SPE view of a segment as an unordered set of all the features supplied by universal grammar. By eliminating redundant features from underlying representation and specifying only unpredictable features, underspecification system constrains possible types of phonological processes in a given grammar.

A variety of arguments for feature underspecification are adduced from both vowel and consonantal phenomena of Korean phonology. The least marked vowel is completely unspecified and due to its featureless representation in the melody plane it is the highest in the hierarchies of both the epenthesis and deletion processes. Resorting to feature underspecification, phenomena of free variation, vowel metathesis and several vowel merger processes are recognized as a single process of simply degeminating the branching structure of the nucleus. Under this generalization, the product of merger of two feature matrices automatically follows, the union of two matrices being the underspecification for a third vowel. In chapter 4 separate processes of tensification, neutralization, and nasal assimilation are also seen to be all conditioned by a single denominal adjective morpheme.

The present study addresses the issue of the structure of features in the melody plane and their relation with other planes of representation. Postulation of feature-sized morphemes for the light ideophone [+low] and the denominal adjective [+constricted glottis] strongly argues for the representation of a feature with no skeletal position. On the other hand, evidence from /s/ -irregular verbs provides significant support for the asymmetrical representation of a skeletal slot with no feature specification. This study also argues that glides in Korean are not a part of the onset but a part of the nucleus node, hence providing an insight into possible and impossible diphthong structures. This gives added support for the claim that glides and vowels are nondistinct underlyingly.

As for the organization of the lexicon, the present study deploys both phonology- and morphology-based arguments against the organization of word formation processes in tandem, in favor of non-linear, simultaneous morphological processes. Within this view, phonological rule application is sensitive to the types of morphological structure in the lexicon, rather than depending on their stratum-oriented domain specification.

[152] Sridhar, Shikaripur Narayanaro 1980
Advisor: Charles E. Osgood

Cognitive determinants of linguistic structures: A cross-linguistic experimental study of sentence production

The present study is intended as a contribution to the study of the relationship between language and thought in the area of sentence production.

The basic hypothesis of this study is that a number of crucial properties of language are determined by the structure of human perception and cognition (Osgood 1971). The structural properties investigated include: the identifying and distinguishing functions of nominal modifiers, spatial deixis, unmarked constituent and clause ordering, marked structures such as Passive, Topicalization, Right Dislocation, among others. The independent cognitive variables include: Figure/Ground and Agent/Patient relations, perceptual scanning strategies of vertical and horizontal arrays, distinction between fresh and familiar perceptions, inherent and induced perceptual salience of entities, among others.

This hypothesis, translated into a number of specific sub-hypotheses, was tested cross-linguistically, using a sentence production format. The cognitive distinctions were embodied in a color film consisting of 70 "scenes" which showed an actor and some everyday objects (blocks, balls, etc.) in various action and stative relations. The composition of the scenes and their sequence was manipulated to create cognitive presuppositions — e.g., focus on the object of action was induced by zooming, or by the animacy, or by the greater relative size of the object, and so on. The film was shown in 10 communities around the world and subjects (300 native speakers of ten languages) were asked to "simply describe" each scene in a simple sentence. The ten languages are: Cantonese, English, Finnish, Hebrew, Hungarian, Japanese, Kannada, Slovenian, Spanish, and Turkish. The data (21,000 sentences) were (i) transliterated in the Roman script, (ii) translated morpheme-by-morpheme, and (iii) freely translated into idiomatic English by linguistically trained native speakers.

The analysis of data reveals several fascinating correlations between cognitive inputs and linguistic structures, including: (1) nominals denoting figures of state and agents of action precede those denoting grounds and patients, except in "presentative" contexts; (2) people prefer to express changes of state overwhelmingly more often than accompanying constant states; (3) vertical arrays are described such that the object on top is located with reference to that below, leading to the use of the unmarked "above" rather than the marked "below"; (4) in horizontal arrays, objects closest to the perceiver (ego) are located with reference to those further from ego, resulting in a preference for "in front of" over "on back of"; (5) the order of clauses expressing perceptual events corresponds to the sequence of events in perception; (6) entities rendered salient by virtue of their intrinsic meaningfulness (e.g., humanness), or perceptual focus, tend to be expressed at or near the beginning of the sentence, leading to (a) Passives or Topicalized sentences; (7) "surprise subject" contexts lead to disruption of normal word order: Verb-Subject order in SVO languages (except English) and with the subject immediately preceding the verb in SOV languages; (8) the degree of referential elaboration (measured in terms of the number of adjectival modifiers) depends on the degree to which the intended referent is presumed

to be novel to the listener; the number of adjectives decline continuously with each subsequent mention of a given entity; (9) the nature of referential expressions (including the choice of adjectives and noun phrases) depends on the nature of perceived or inferred alternative members of the same category from which the intended referent is to be distinguished; furthermore, given a choice among distinguishing features, speakers prefer inherent, perceptual features (e.g., color, size, shape) to abstract relational features (e.g., position).

This study, therefore, demonstrates the existence of performance universals which cut across differences between language. In addition, it contributes to the study of comparative syntax by demonstrating the common functional bases of different surface structures across languages. Finally, by demonstrating that various aspects of sentence structure are determined by a variety of cognitive principles (including perceptual, attentional, and pragmatic principles), it contributes to a functional, explanatory theory of language performance.

[153] Steffensen, Margaret Siebrecht 1974
Advisor: Howard Maclay

The acquisition of Black English

In this dissertation, the developing language of two children, Jackson and Marshall, will be analyzed, focusing primarily on the emergence of dialectal characteristics. The age period covered for Jackson was 20 months to 26 months, 2 weeks; for Marshall, 17 months, 2 weeks to 26 months, 1 week. The dialect spoken in their homes will be examined in Chapter Two for the characteristics of Black English (hereafter BE) that have been identified in the linguistics literature and it will be demonstrated that both children are being raised in BE speech environments. In the following three chapters, their speech will be analyzed for the emergence of these features, concentrating particularly on those involving the noun phrase, the copula and the verb phrase. The development of negation will not be discussed in this study. It will be argued that the differences between their development and that of children acquiring the Standard dialect are trivial, although in the case of the copula one structure already conforms to the adult BE pattern. However, even in this instance it can not be argued that this is different from the pattern of acquisition in the Standard dialect because there have been no studies directed specifically to the distribution of the copula in the Standard.

[154] Stein, David Neil 1975
Advisor: Michael Kenstowicz

On the basis of English iambic pentameter

This essay is a report on the search for a better way to describe the most common form of English metric verse: iambic pentameter, also called blank verse and, if rhymed, heroic verse. The thesis of this essay is that once an adequate theory of English rhythmic and timing characteristics has been formulated, a theory of meter can be derived from it. That is, I believe that a metric type is a particular stylized form of rhythm extant in English non-poetic utterances. The features of English rhythm are what the poet manipulates when composing his metered verse. I suggest in this essay that the principles of English rhythm as enumerated by Andre Classe (1939) and the specific characteristics of isochrony of the intervals in the speech stream as investigated by Ilse Lehiste (1971, 1973a, 1973b, 1973c) provide a sufficiently

rich and well-substantiated theory of English rhythm in non-metered discourse, so that I may motivate a theory of iambic pentameter.

The essay is organized in the following way: Chapter One discusses three suggested bases from which lines of iambic pentameter have been thought to be derived: temporal bases in the form of isochronous intervals; syllabic-stress bases in the form of a string of feet; and accentual-stress bases described as a string of two types of abstract positions, weak and strong. Chapter Two investigates a topic raised in Chapter One — the metrical status of minor category words and morphemes: auxiliaries, prepositions, pronouns, derivational suffixes, etc. Chapter Three examines a variety of iambic pentameter in which lines are said to contain an "inverted" foot — a trochee replacing an iamb; that is, in place of the expected unstressed-stressed syllabic sequence (the iamb), the poet substitutes a stressed-unstressed syllabic sequence (the trochee). Chapter Four is concerned with the motivation of a theory which will describe in a non-ad hoc manner the distribution of inversion in a line of iambic pentameter. The essay concludes with a list of prospective areas that are opened to further investigation as a result of this study.

[155] Steinbergs, Aleksandra 1977
Advisor: Michael Kenstowicz

The phonology of Latvian

The dissertation deals with the major phonological processes of Latvian. Chapter One provides a detailed description of the sound segments of Latvian and goes on to discuss those phonological processes which occur generally throughout the language and are not limited to any particular type of word. Chapter Two describes rules which apply in nouns and/or adjectives. Some of these rules also apply to verbs and are further discussed in the third chapter. The third chapter goes on to describe morphophonological rules that affect verb endings and roots. A detailed discussion of the underlying forms of personal endings and tense markers argues for a less abstract set of forms for these endings than has been posited in earlier treatments. Finally, the reflexive verbs are dealt with in detail.

The last chapter describes the tonal dialects of Latvian and gives phonetic descriptions of the tones. Data from the central tonal dialect illustrate the distribution of the tones on various types of morphemes. It is shown that, despite some claims that there are no languages with tones on unstressed syllables (made particularly by Kurylowicz), Latvian does have unstressed syllable tones. As well, in addition to the kind of lexical tone found on roots and most derivational endings, there is a type of tone I have called 'morphological' that occurs on groups of inflectional endings which may have different phonological forms. Finally, some rules are given for placing predictable tones.

[156] Stock, Roberta 1976
Advisor: Howard Maclay

Some factors affecting the acquisition of a foreign language lexicon in the classroom

It would be useful if the foreign language pedagogue could determine which words were difficult for the language student to learn and why.

However, the literature in the field of language pedagogy deals, for the most part, with only such pedagogical issues as a) when should new words be introduced; b) what is the best method for teaching and practicing new words; and c) what are the criteria to be used when selecting items to be taught, and not with the issue of difficulty.

This dissertation considered this notion of difficulty and isolated factors associated with the physical shape of the word (i.e. pronunciation, length), grammatical characteristics (i.e. category, gender) and meaning in order to see what their effect was on the rate of acquisition and the length of retention. In addition, factors not directly intrinsic to specific items were considered: subjective feelings, native language interference, usefulness, etc.

Finally, two specific methodological approaches (audio-lingual and situational) were analyzed in light of three criteria: a) experimental evidence; b) treatment of problematic items; and c) facilitation of learning.

It was concluded that some factors had more effect on the acquisition of a foreign language lexicon in the classroom and that a tentative hierarchy could be postulated:

a) A successful methodology would have the most positive effect on acquisition. This includes such considerations as ordering, criteria for selection of items, etc.
b) Factors caused by the juxtaposition of two or more items (i.e. antonyms, similar-sounding words) have more effect (usually negative) on acquisition than those factors intrinsic to individual items (i.e. difficulty of pronunciation).
c) Non-intrinsic factors (i.e. subjective feelings) have more of an effect (positive and negative) on acquisition than intrinsic ones.
d) Intrinsic factors have the least effect on acquisition.

Methodology was considered a factor since if a method is successful, it will neutralize the effect of the negative factors and utilize the effects of the positive ones.

[157] Stucky, Susan U. 1981
Advisor: Charles W. Kisseberth

Word order variation in Makua: A phrase structure grammar analysis

The purposes of this dissertation are two-fold. The first is to examine one aspect of the syntax of a largely undescribed Bantu language, Makua. The aspect under consideration is the syntactic property loosely (and perhaps ill-advisedly) termed free word order. The second purpose is to provide a formal treatment of this part of Makua syntax. The analysis is cast within that version of phrase structure grammar as developed by Gerald Gazdar at the University of Sussex. This version of phrase structure grammar embodies two trends in linguistic theory: 1) a movement away from transformations and towards base-generation and 2) the incorporation of a compositional semantics of the sort advocated by Montague and others.

It is argues that even though Makua exhibits a certain degree of order freedom, it is inappropriate to analyze this order as free at the word level or free at the constituent level. Rather, certain constituents and words enjoy freedom while others do not. The analysis proposed consists of a set of rules with specific properties which depend, in part, on the existence of certain

constituents, e.g. the presence of a verb phrase in some orders but not in others. Other rules are motivated by constraints on the distribution of such constituents as sentential complements and infinitive complements (but not infinitives themselves). Additional supporting evidence for the separate rules comes from the formalization of verb agreement and from the analysis of the syntax of relative clauses. It is concluded that this multi-rule approach renders both scrambling rules or linear concatenation rules not only superfluous for an analysis of Makua syntax, but inadequate as well.

It is of no small importance to syntactic theory that a general account of order can be given in a grammar consisting entirely of phrase structure rules, because such grammars were thought (by early advocates of transformational grammars) to be not only inelegant, but inadequate on descriptive grounds. In addition, the kind of analysis provided for Makua is suggestive of a general approach to order freedom, which, unlike other formal proposals for such languages, requires the addition of no fundamentally different rule type (e.g. scrambling transformations (Ross (1967)) or linear concatenation rules (Hale (1979) and Lapointe (1980)). Because linguistic theories tend to be ephemeral in nature, the most lasting contribution may well be the presentation of data from a heretofore unstudied language. It is hoped that the thesis presents a significantly large body of data to aid in our general understanding of human language.

[158] Subbarao, Karumuri Venkata 1974
Advisor: Yamuna Kachru

Noun phrase complementation in Hindi

This dissertation deals with the following aspects of noun phrase complementation in Hindi: structure of the noun phrase, the various complementizers, relevant transformational rules such as Equi-NP Deletion, Subject Raising, Extraposition and *yah* 'it'~ *aisa* 'such' Deletion. It also considers the constituent status of the *ki* and the *ka-na* complements. In addition, some aspects of the structure of the participles in Hindi are discussed.

It is shown that the underlying word order of constituents of the noun phrase in Hindi is S NP or S N, just as in many other irrefutably verb-final languages. It is also shown that the underlying word order of the constituents subject, object and verb is independent of the direction in which the embedded S is moved. Evidence is presented to show that the claim that all rightward movement rules are upward bounded cannot be a universal because an embedded S in Hindi can be moved rightward unbounded.

Strong evidence in support of the claim that the grammar must include global rules is presented from two rules — Unbounded Extraposition and *yah* 'it' ~ *aisa* 'such' Deletion.

It is demonstrated that Hindi provides counter-evidence to Ross's claim that subjects have "primacy" over objects. Evidence is presented to show that the claim that factive complements do not permit 'raising' holds for Hindi too.

It is argued that deletion or movement of an NP from the embedded sentence in certain structures results in participialization. It is shown that the existing pruning conventions are inadequate in capturing the intuitions of the native speaker in some cases.

Significant new data concerning the postpositions in Hindi is presented and it is shown that the postpositions that occur in sentence adverbials are different from those that occur with a class of verbs called "oblique verbs." It is argued that the postpositions that occur in sentences with oblique verbs are inserted by the Postposition Insertion rule. It is also shown that the rule that deletes the *ke liye* with a purposive interpretation can be treated as a global rule.

[159] Sung, Li-May 1990
Advisor: Peter Cole

Universals of Reflectives

The locality conditions on reflexives vary widely from language to language. In English, a reflexive (e.g. *himself*) must take a local antecedent. In contrast, in Asian languages like Chinese, a reflexive (e.g. *ziji*) can take an antecedent indefinitely far from its antecedent. Futhermore, in European languages, a reflexive is bound in a less restricted domain than in English, but not in an indefinite domain as in Chinese. The purpose of this dissertation is to develop a unitary analysis of locality conditions on the binding of reflexives among languages within the general framework of Government and Binding theory. The core idea explored here is that reflexives in all languages obey the same locality conditions and that apparent long distance reflexives involve local successive cyclic head movement.

Chapter 1 provides a general idea of the ways in which languages seem to be different with respect to long distance reflexives in terms of locality conditions. I suggest that long distance binding between reflexives and their antecedents is in fact local binding in much the same way that a local relation holds between wh-elements and the original and intermediate movement sites.

In chapter 2, taking Chinese as a starting point, I propose that the differences between *ziji* 'self' and *ta ziji* 'himself' in Chinese hinge on whether the reflexive form is x^0 or x^{max}. x^0 reflexives like *ziji* will involve head movement from INFL to INFL, thus licensing long distance binding. In contrast, x^{max} reflexives like *ta ziji* or himself adjoin to x^{max} projections. Therefore, x^{max} reflexives can have only local antecedents.

Chapter 3 explores the idea of proposing a simple set of principles governing feature percolation to allow a unified treatment of a number of related phenomena. I argue that four sets of data are to be accounted for by the proposed Feature Percolation Principles. The sets of data are (1) the differences in "blocking effects" of long distance reflexives in East Asian and European languages; (2) the so-called "sub-command" facts in East Asian languages; (3) the *that* trace effects in English and other languages; and (4) Pro-drop parameter among languages.

In Chapter 4, I first discuss a number of problems with the x^0/x^{max} hypothesis. I then compare the head movement analysis proposed in this thesis with a number of previous approaches to long distance reflexives. I argue that these alternative proposals are inadequate conceptually and empirically and, as a result, the head movement analysis is to be preferred.

[160] Surintramont, Aporn 1979
Advisor: Frederic K. Lehman

Some deletion phenomena in Thai

This dissertation is an explication of a part of the linguistic competence of every speaker of Thai. It examines the topic of deletion in the grammar of Thai. This work will be devoted to justifying two specific types of deletion phenomena — free deletion and anaphoric deletion.

In Chapter 2 we re-examine two arguments which have appeared in the literature of Thai grammar for two free deletion transformations: UNSPECIFIED AGENT DELETION in "passive" sentences and the OBJECT DELETION in sentences containing transitive verbs. We argue that they should be treated as one rule of deletion based upon the similarity in the semantic properties of the deleted terms.

Chapter 3 to Chapter 5 are devoted to another type of deletion phenomena — anaphoric deletion. One particular phenomenon is dealt with in detail, namely, the deletion of pro-forms in a variety of sentence constructions. The purposes of this detailed investigation is to establish the nature and the properties of the deleted terms, to propose the transformational rule or rules involved in the phenomenon and the conditions under which they may operate, and lastly, to hypothesize how the antecedent of the deleted as well as the non-deleted anaphors is found.

In the last chapter, Chapter 6, we summarize the findings of our investigation of deletion phenomena in Thai grammar.

[161] Tegey, Habibullah 1977
Advisor: Charles W. Kisseberth

The grammar of clitics: Evidence from Pashto (Afghani) and other languages

Grammarians and linguists have long recognized the existence of a set of problematic morphemes, "clitics." With the appearance of words in the transformational mold by Browne and Perlmutter, interest in these morphemes increased. Nevertheless, the grammar of clitics has remained a poorly understood area. An extensive examination of clitics in Pashto and other languages not only offers some answers to the many questions that exist about the grammar of clitics, but also serves to clarify some central issues relative to the nature of grammars in general.

In a consideration of the general constraints on cliticization and zero pronominalization, which are commonly entirely parallel in function, it is established that for an NP to undergo cliticization or zero pronominalization it must be contextually identifiable, must be noncontrastive and nonfocused, and must be nonconjoined. In fact these three constraints derive from a single principle: An NP can undergo cliticization or zero pronominalization only when it carries "given" information — i.e. information that is provided by context.

Moreover, in Pashto and several other languages, cliticization and zero pronominalization together can account for structures that on the face of it might look like the outputs of various NP reduction processes such as Equi NP Deletion or Relativization, which in English are accounted for by separate rules.

One group of clitics in Pashto, which are placed in "second position" in simplex sentences, reveal that both stress and morphological structure have relevance for a syntactic rule, clitic placement.

In complex sentences, the placement rule for these clitics operates within each simplex clause in a manner parallel to its operation in simple sentences. Certain apparent counter-examples are explained by showing that a sentence-initial head noun plus relative clause in fact lies outside the clause where the clitics originate, presumably having undergone an "Extraction" rule.

The placement rule for these clitics interacts with a vowel coalescence rule, providing strong evidence for the interdependence of the different components of the grammar — i.e. a clitic placement rule must apply after the application of a vowel coalescence rule.

The data in hand indicates that three common views relative to clitics and clitic placement rules are not accurate. First, it is not the case that all clitics which are moved to a certain position in the clause and which occur in a fixed order relative to one another are subject to a filter-like constraint on clitic orders. Second, contrary to what the literature to date has usually implied, it is not the case that all clitics subject to clitic placement rules in a given language move to the same position in the clause. And third, contrary to Perlmutter's claim, clitic placement rules may have to refer not only to the "cliticness" of the item but also to its syntactic function.

Finally, an examination of the components of the traditional definition of clitics serves to pick out certain inadequacies or obscurities in such concepts as "phonological word," "lean on," etc., and points towards a fuller characterization of "clitic."

[162] Tegey, Margaret Elisabeth 1989
Advisor: Howard Maclay

The learning of coreferential NP reductions by adult Persian speakers

The main purpose of the study was to validate empirically several key hypotheses in second language learning theory, a secondary purpose being to obtain a description of what is hard and what is easy for the learner. The study first sought to validate the central hypothesis that a second language learner operates according to a coherent linguistic system, one intermediated between his native language and the target language and distinct from both. Like other studies in this line, it looked, then, for the systematicity in the learner's performance as evidence of a coherent linguistic system in use. To discover the systematicity in the apparently random student production, this study examined the operation of selected syntactic processes (the coreferential NP reductions of pronominalization, deletion, and relativization) in as many environments and sub-environments as possible. The use of several environments, defined as narrowly as possible is the key to finding patterning in the learner's performance — performance which viewed as a whole seems random. If the environments are fine enough, the learner's errors will, it is hoped, emerge as not random after all, for it will be seen that he makes more errors in, say pronominalization in Environment A than he does in Environment C; in other words, he makes errors systematically.

Looking at difficulty orderings and by doing some analysis of the types of errors made, this study attempts (a) to discover whether there is evidence of systematicity, and thus support for the claim that the language learner

possesses a coherent intermediate linguistic system, and, as a practical offshoot, to provide descriptive information as to what the learner's system is like; (2) through comparison of the rankings for two or more groups, to give some indication of whether there is anything approaching consistent difficulty orderings for the categories across different groups of learners, providing support for the existence of universal tendencies in second language learning; and (3) in some instances, through an examination of the patterning or the difficulty orderings and through an analysis of error types, to provide a glimpse into what processes lie behind what is happening.

[163] Teoh, Boon Seong 1989
Advisor: Michael Kenstowicz

Aspects of Malay phonology revisited — A non-linear approach

This dissertation re-examines the phonological system of Malay within a non-linear framework. CV-phonology and the generative theory of the syllable developed by Clements & Keyser (1983) and the hierarchical representation of phonological structure developed by Sagey (1986), are used in the analysis. This study examines the vowel system of Malay and provides syllabification rules as well as restrictions on vowel co-occurrences, vowel sequences and diphthongs in Standard Malay. The basic syllable structure of Malay is generated by an ordered series of three syllabification rules. We claim that Malay is a Type III language as classified by Clements & Keyser (1983), namely of CV(C) type in which every syllable must have an onset. This necessitates a new interpretation of the status of the glottal stop in Malay. The general rule that glottalizes /k/ to [ʔ] by removal of the point of articulation features in syllable codas is then analyzed. In Malay two vowel-initial suffixes /-an/ and /-i/ geminate a preceding consonant and begin with a homorganic glide after high vowels of the root word. Our analysis posits an empty X-slot for these suffixes which links to the preceding segment. With stems ending in a velar we incorrectly predict blockage of glottalization by geminate inalterability (Hayes 1986). We discuss the rules of glottal formation and gemination and show how phonological representation can restrict rule application and account for the phonetic facts in Malay. In analyzing Malay we found that it does not allow geminates and we offer an explanation that relies on a minimal readjustment in the autosegmental linkings to make the representation conform to the Universal Grammar and language-particular constraints. We conclude the study by surveying the Malay dialects. The phenomenon of oral depletion, i.e. obstruents /p,t,k/, → [ʔ] and /s,f/ → [h] in syllable coda in the Kelantan and Terengganu dialects is analyzed. The data from the Malay dialects are the first case reported in the literature, to the best of our knowledge, in which changes of /p,t,k/ to [ʔ] and /s,f/ to [h] co-occur in the same grammatical system.

[164] Thayer, Linda Jean 1974
Advisor: Herbert Stahlke

A reconstructed history of the Chari languages — Comparative Bono-Bagirmi-Sara segmental phonology with evidence from Arabic loanwords

A language has many aspects. In defining its relationship to other languages, many factors are involved. To say that members of a group of languages are genetically related to one another is to say they had a historically common origin. The object of this work is to reconstruct the

parent language of the present day Chari languages. In preparation for reconstructing the CHARI parent (Chapters 2, 3, and 4), I will show the characteristics common to this group of languages as a whole in terms of sound correspondences and sound changes. A language that does not share the present day sound correspondence patterns (and thus does not share the historical sound change patterns) is not a Chari language.

This work deals primarily with the sound systems of Chari languages. By mass comparison of the corresponding sound of cognate vocabulary items, I work out tables of sound correspondences (Chapter 3, Tables 1 through 10). These tables are based on natural classes of phonological segments as determined by the way in which the individual segments behave in various environments. By comparing the behavior of sound correspondences, I reconstruct the CHARI proto-language and the intermediate proto-languages, and derive the history of Chari sound changes, discussing possibly alternative historical explanations.

The following chapters will depict the common history of Chari sound changes (Chapters 3, 4, 5) and will reconstruct a number of Chari vocabulary items (Chapter 6). The Appendix adds a lengthy section on Arabic loanwords in the Chari languages. Both segmental (consonants and vowels) and supersegmental (tone, stress, length) data are taken up. But first, the long, careful, and tedious process of reconstructing the Chari language history begins in Chapter Two with a phonological description of each language.

[165] Treece, Rick Everett 1990
Advisor: Eyamba G. Bokamba

Deverbal nominals in Kiswahili: Underspecification morphology and the lexicon

This study provides an explicit account of the lexical entries and rules required to generate five common types of Kiswahili nouns based on verbal roots and stems, as illustrated by the data below, all derived from *-kata* 'cut'.

a.	Action Nominals in -o:	mkato/mikato	'cut(s)'
b.	Transitive Verbals in -a:	mkata/wakata	'cutter(s)'
c.	Relic Agentives in -i:	mkati/wakati	'cutter(s)'
d.	Productive Agentives in -aji:	mkataji/wakataji	'cutter(s)'
e.	Patient Nominals in -e:	mkate/mikate	'lump(s), loaf/loaves'

Underspecification Theory as developed by Archangeli & Pulleyblank (1986) is adopted to aid in this descriptive task. A rigorous analysis of the Kiswahili phoneme set is provided in this framework, with underspecified and fully specified representations of all phonemes as well as explicit default and complement rules. A detailed account of various types of prefix allomorphy is included, both for inherent nouns and for derived nominals.

The apparent simplicity of the data above is deceptive, even disregarding the account provided of the stem and suffix allomorphy associated with the Relic Agentives. Issues confronted in the description include semantic drift, blocking, percolation, questions of derivational source, and archaic roots. A particular focus of the study is to streamline the lexical entries by avoiding the explicit specification of redundant features of all kinds.

An innovation in the research is the application of the principles of Underspecification Theory beyond the phonology to capture redundancies in and among the morphological, semantic, and syntactic features and representations. To develop and illustrate this approach, a set of four binary morphological features is proposed to capture the Kiswahili noun-class system. A further innovation is the use of Lexical Cross-References (LXRefs) which capture generalizations relating to morphological complexes while allowing redundant information to be filled in automatically.

[166] Tsitsopoulos, Stamatis 1973
Advisor: Charles W. Kisseberth

Stress in Modern Greek

This study will examine the placement of primary stress in Modern Greek (hereafter MG) utterances. 'Primary stress' is not to be confused here with the notion 'Main Stress' as formulated for English in N. Chomsky and M. Halle's *The Sound Pattern of English* (hereafter referred to as SPE). In fact, the mechanisms for stressing MG utterances bear very little resemblance to the framework of SPE. For one thing, any connection between stress and constituent structure is confined within word boundaries: it is only word-internal syntactic intricacies that may have a bearing on the position of stress, and then only indirectly. Far more important is the reliance of stress rules on surface syllabic arrangements and the phonological nature of inflectional endings. Furthermore, each word in MG has at most one stress. Specifically, words belonging to the major parts of speech (Nouns, Verbs, Adverbs, Adjectives and Participles) have exactly one stressed syllable; pronouns, articles, and undeclined particles can have one or none, depending on their lexical classification. Any objectively detected stress gradations among various syllables of a given utterance are under the control of either performance factors or intonation contours. In other words, the notion 'degree of stress' is peripheral to the basic perception, as well as the methodological principles of generative phonology. The gap between the 'least stressed' and the 'least unstressed' syllables is a quantum one. The present analysis will not venture beyond this binary distinction, and thus for its purposes 'stress' will be synonymous to 'primary stress'.

[167] Tsutsui, Michio 1984
Advisor: Jerry Morgan

Particle ellipses in Japanese

In this study I consider two kinds of particle ellipsis, syntactic particle ellipsis and conversational particle ellipsis. Syntactic particle ellipsis (discussed in Chapter 1) is the type of particle ellipsis caused by certain syntactic conditions. Only case particles are ellipted under these conditions. When one of these conditions is satisfied, the naturalness of case particle ellipsis (or retention) varies from "totally natural" to "totally unnatural" depending on the particle and the function it performs. To describe this phenomenon, I hypothesize that there is a hierarchical relation among case particles which perform different functions regarding their ellipsis and retention. Statistical data supports this hypothesis.

Conversational particle ellipsis (discussed in Chapters 2, 3 and 4) is another type of particle ellipsis which takes place in conversation even if none of the conditions for syntactic particle ellipsis are satisfied.

Chapter 2 discusses the ellipsis of the topic marker *wa* in conversation. Here, I show that the ellipsis of *wa* marking X is natural if the speaker and the hearer maintain close contact with the referent of X at the moment of speech.

Chapter 3 presents some general rules of case particle ellipsis in conversation. In one of these rules I claim that the ellipsis of the case particle (CP) of an NP-CP is unnatural if the NP-CP conveys the idea of exclusivity, i.e., the idea "not others but X" or "X and only X."

Chapter 4 discusses the ellipsis of the case particles *ga* and *o* in conversation. Here, I demonstrate that the ellipsis of *ga* in an utterance is natural if the speaker believes the utterance carries a certain kind of information. I also show that the position of an NP-*ga* or NP-*o* in a sentence affects the naturalness of the ellipsis of *ga* or *o*.

This study reveals that statements like "recoverable particles can be elipted" cannot explain the ellipsis of particles, that the ellipsis of particles is a matter of degree of naturalness rather than naturalness versus unnaturalness, and that various aspects of language, including phonology, syntax, information and situation, have bearing on the ellipsis of particles.

[168] Valentine, Tamara 1986
Advisor: Braj B. Kachru

Aspects of linguistic interaction and gender in South Asia

This study is a cross-cultural and cross-linguistic investigation of language use and language structure within the non-Western context of India. It especially focuses on the relationship between gender and communication in two languages: Hindi, an Indo-Aryan language of India, and Indian English.

Primarily examining the creative fiction writings of Indian authors of Hindi and Indian English, this study examines the following major points of focus.

First, this study examines how males and females are represented in the Hindi language and Indian English. Several aspects of linguistic sexism are examined: among others, linguistic gaps, symmetries, and non-parallelisms exhibited by masculine generic formations, masculine marked terms, and homogenized and universalized forms. These occurrences reveal the lexical faults of ambiguity, exclusiveness, and inequity in the languages.

Second, this study is concerned with the dynamics of gender differences in conversational style in Hindi and Indian English written and spoken cross-sex conversations. The interactional patterns which emerge reveal how discoursal work is done in continuous verbal exchanges which leads to effective or non-effective communication. The conversational strategies and patterns examined include the rates of successful initiation of discourse topic, both with question and with statement forms, the development and flow of discourse topic, and the use of various regulatory linguistic devices which coordinated verbal interaction. It is suggested that Indian authors/users of English are influenced by their native sociocultural and linguistic contexts, hence these formal characteristics of Hindi are transferred into English. Moreover the social dimension gender is being transcreated.

Third, this study questions why in previous studies on varieties of English the social dimension gender has not been included to help distinguish non-

native varieties further from standard English varieties. In order to attempt to answer this question the concepts of transference and creativity are introduced and discussed. The following claims are made. An examination of gender in Indian English helps to further explain and distinguish the non-nativeness of this variety and contributes to the creative innovations in terms of the formal characteristics, the socially-determined speech functions, and the sociocultural components involved in the transcreational process. Furthermore, to fully understand the process of transference the traditional social and cultural categories of India from which female-types are derived are discussed.

Research and descriptions of the relationship of gender and language in native as well as in non-native contexts, provide insight into a global understanding of language use across cultures, languages, and regions of the world, contribute to the understanding of the mechanisms of social differentiation across languages, further the study of male-female communication, and raise issues concerning lexicographical research, intelligibility and interpretability, the training of language specialists, the teaching of English and non-English language and literature, and the understanding and appreciation of native and non-native texts in creative writings.

[169] Vanek, Anthony Ladislav 1969
Advisor: Robert B. Lees

Syntactically oriented phonological analysis

As indicated by its title, the topic of this thesis is subject-verb agreement. At first glance the scope of the topic appears to be extremely limited, being concerned merely with the determination of the syntactic machinery that assigns some property, or properties, of the subject noun phrase to the verb of the sentence. But even this apparently simple task requires us to examine a wide variety of phenomena which have direct bearing on agreement. In the first place, it is necessary to determine exactly what is the constituent "noun phrase" that functions as the subject with respect to agreement. Second, we must direct our attention to the "verb" in order to ascertain the structure of the verbal complex at the point in the derivation when the agreement rules apply; specifically, we must reanalyze the constituent which has been referred to as the verbal auxiliary. Third, we must pose the question of whether agreement is a "surface phenomenon," as it has been generally thought to be by traditional grammarians. Last, we should consider the relationship of the syntactically derived structure of the inflected verbal form to its internal structure which is the input to the phonological component.

The analysis of the phenomenon of subject-verb agreement and the arguments presented in support of our assumptions are based primarily on data from Czech, although occasional reference will be made to other Slavic languages whenever it is felt that consideration of related problems may shed light on the analysis. The scope of the analysis is quite limited, but it is impossible to view the grammar of subject-verb agreement entirely in isolation from the rest of the grammar of Czech. Therefore, it has been necessary to extend the analysis in certain areas to encompass relevant related areas of syntax.

[170] Wahab, Abdul 1986
Advisor: Yamuna Kachru

Javanese metaphors in discourse analysis

This study focuses on three major issues: exploring the possibility of separating Javanese metaphors into universal and language-specific, proposing a model of understanding metaphors, and determining the domain within which metaphors are interpreted. A separation of Javanese metaphors into universal and language-specific is necessary to answer the question "Why are some metaphors readily interpretable while others are not when viewed from different cultural background?" The proposed model begins with the given utterance and is followed by three components: shared predictions, experimental gestalts, and semantic and pragmatic interpretations.

The essential premise is that understanding metaphors requires a pragmatic approach by applying principles of discourse analysis, i.e. the principle of local interpretation and the principle of analogy, and by taking into considerations context of situation, coherence, and cohesion. Two major semantic theories of metaphor (interaction theory and comparison theory) are reviewed in this study to determine whether the domain with which metaphors are interpreted is semantic or pragmatics.

Six Javanese rhetorical forms are described because these rhetorical forms contain metaphorical expressions as their basic elements. The description of these rhetorical forms include their physical forms and communicative functions.

The analysis in this study is primarily based on a wide range of written and oral texts from Central Java and the western part of East Java. Directions for future research are suggested for further study.

[171] Wahba, Wafaa Abdel-Faheem Batran 1984
Advisor: Michael Kenstowicz

WH-construction in Egyptian Arabic

This study investigates certain aspects of the syntax of S-structure and the syntax of Logical Form (LF) as manifested by the behaviour of wh-questions in the grammar of Egyptian Arabic. The framework within which this thesis is written is that of Government-Binding theory, as set forth by Chomsky (1981a). Wh-operations in EA have the option of appearing under the Complementizer node or in their base position (in-situ). The fact that the grammar of EA allows movement in both the syntactic component, i.e., SS, and the interpretive component, i.e. LF, provides us with the opportunity to contrast the Syntax of SS with the syntax of LF as exhibited by the same construction, wh-questions in this case.

The first half of this thesis examines the behaviour of wh-questions at SS, where the questioned site is obligatorily marked with a coindexed resumptive pronoun. I show that the latter is syntactically bound to its antecedent via a wh-movement rule which observes Subjacency. The second part of the thesis deals with the syntax of LF as exhibited by the behaviour of wh-phrases-In-situ. The data examined provide strong support of the existence of a nonovert movement rule at LF, and, hence, for the level itself. The LF movement rule affords a uniform account of several generalizations which might otherwise

be describable via a conjunction of unrelated properties. It captures the similarities that hold between movement in Syntax and movement in LF.

The interaction between SS movement and LF movement with respect to the wh-island constraint, which I show to apply at both levels, provides empirical evidence concerning two separate issues. These issues center on the nature of Subjacency as a constraint, i.e., whether it is a constraint on movement or a constraint on representation, and the successive cyclic nature of Move alpha. I argue that evidence from EA shows: (a) Subjacency is a constraint on a movement process, as opposed to a constraint on the output of a given level of representation, and (b) Move alpha applies in successive cyclic steps and not in an unbounded step. This study also provides crosslinguistic evidence for the status of the Empty Category Principle as a principle of Universal Grammar.

Finally, another theoretical point of interest for which this study provides compelling evidence is that Subjacency applies at the LF level in EA. The fact that Subjacency applies both to syntactic as well as interpretive rules in EA provides more support of the universality of the Subjacency principle. Subjacency holds at LF in the grammar of Iraqi Arabic (Wahba, forthcoming) and in Tengale (Kidda 1983). The former has movement at the LF level only. However, LF movement in Chinese freely violates Subjacency, a situation which has been assumed to be true of all the languages with LF movement that have been studied so far, including Japanese, Turkish (Hankamer 1975), and Ancash Quechua (Cole 1982). Thus, there are some languages which observe Subjacency at LF, as well as at SS, and others which only observe Subjacency at SS. This kind of parametric variation is to be expected, as some languages may generalize a universal constraint holding at one level to another level. This means that Subjacency acts as a universal constraint at SS and a language specific constraint at LF. This assumption, in turn, explains the difference between EA, Iraqi Arabic, and Tengale, on the one hand, and Chinese, Japanese, Turkish, and Ancash Quechua, on the other.

[172] Wallace, William David 1985
Advisor: Hans Henrich Hock

Subjects and subjecthood in Nepali: An analysis of Nepali clause structure and its challenges to Relational Grammar and Government and Binding

Both Early and Modern Nepali use a variety of nonbasic clause structures, including dative-subject (inversion) clauses, obligational (gerundive) clauses, passive clauses, and, in Early Nepali, ergative clauses. The properties of basic clause subjects are split in these clauses between two NPs — the 'logical', nonnominative subjects and the grammatical nominative subject. This distribution can be explained by assuming that an NP which controls subject properties shares some functional or configurational feature with basic clause subjects. The acquisition of subject properties by ergative agents has affected basic clause syntax in the Nepali perfective tense.

In a Relational Grammar of Nepali, subject properties are of two types: morphological (word order, verb agreement, case assignment, nominalizations) and syntactic (reflexivization, conjunctive participle control, EQUI control, conjunction reduction, EQUI deletion, subject-raising, object-raising). NPs are assigned morphological properties through hierarchical processing; the highest ranking term relation in the clause controls the subject property.

Syntactic properties are controlled absolutely by a specific class of NPs. Where a complement clause contains no final *l*, the complement clause itself serves as the NP controlling a syntactic property in the matrix clause. The process of morphological clause union supports this analysis. The Nepali data thus show that nonbasic clauses may be analyzed as 'subjectless', i.e., having no final *l*, rather than 'impersonal' with a dummy NP as the clause final *l*.

The Government and Binding framework provides interesting insights into Nepali clause structure. All nonbasic clauses can be analyzed as having an empty category in the subject position, while other NPs occur as VP complements. However, certain principles of GB may be sensitive to both configurational and functional properties of NPs. At certain levels of the grammar, two NPs differently situated and functionally distinct cannot be distinguished by certain grammatical processes. Thus the Nepali data show that modifications must be made in the GB binding theory and control theory.

[173] Warie, Pairat 1979
Advisor: Braj B. Kachru

Some sociolinguistic aspects of language contact in Thailand

This thesis is an attempt to study some aspects of language contact in Thailand. A portion of this dissertation will take up the study of Thai-English code mixing (CM), hoping that this aspect of the two languages in contact will be of value both in terms of its theoretical implications for language change and for its applied implications with reference to language attitude and educational considerations.

Although my main focus is the study of CM in Thai with special reference to English, I will also provide a brief sociolinguistic profile of Thailand, as this is essential to a better understanding of CM. Chapter two will take up this topic. In Chapters three and four a brief historical background of language situations in Thailand will be presented. Such discussion is crucial to an understanding of the language attitudes of Thai people towards the use of the mixed language.

It is also hoped that the study of CM will yield some important evidence concerning processes of nativization used by Thai speakers. An attempt is also made to answer the following questions: 1) To what extent are English words absorbed into the Thai structure? 2) What, if any, change has been initiated to the Thai structure as a result of such mixing? 3) To what extent does the study of English-Thai mixing support the current views of language change exemplified in Weinreich, Labov and Herzog (1968), Labov (1966, 1972), Wang (1969), and Wang and Cheng (1970), as opposed to the Neogrammarians' theory of sound change?

[174] Wentz, James Paul 1977
Advisor: Howard Maclay

Some considerations in the development of a syntactic description of code-switching

This dissertation is organized around the notion that "code-mixing" and "code-changing", which together we will refer to as "code-switching", are important manifestations of language contact, and whether or not our particular formulation of the difference is theoretically workable in a broad

range of cases of bilingualism, the concept of categorizing types of code-switching date is, we feel, ultimately a sound one.

Chapter I is an outline of the essential information needed for understanding how code-switching functions as a social phenomenon. In effect, this chapter illustrates how we found code-switching was used by the children in our study for such socio-linguistic purposes as distinguishing roles, situations, and various stylistic parameters. In Chapter II one specific mode of discourse, narrative, is examined with regard to code-switching. It is determined that code-switching occurs relatively infrequently in the narrative style among these children, and that it is likely that code-changing is much more relevant to narrative than is code-mixing.

Chapter III is the heart of our philosophy of bilingualism. We attempt to accurately define and distinguish between borrowing and code-switching. Notions such as "dominance" are discussed within our theoretical framework, and the prospect of accurately defining such vague concepts in terms of the bilingual in the real world is explored.

Chapters IV and V concentrate on the theoretical implications of the central claims of this dissertation. Principally, the concepts of "code-mixing" and "code-changing" are further defined and tested. The notion of the "bicodal word constraint" is set forth, and it is concluded that many of the aspects of bilingualism are actually aspects of language in general.

Finally, Chapter VI illustrates how the study of code-switching may lead not only to positing "Monolingual Codes" as Chapter V suggests, but also to rethinking such phenomena as ellipsis and identity in monolingual repertoires. Chapter VI is in essence a step in the direction of practical application of the ideas developed in the course of the entire dissertation, and it is intended to suggest that general linguistics may be well served by considering bilingual data as extremely valuable material for furthering research on syntax.

[175] Wible, David Scott 1990
Advisor: Peter Cole

Subjects and the clausal structure of Chinese and English

The purpose of this dissertation is to develop explanations of some syntactic differences between Chinese and English. The core idea explored is that the absence of subject-verb agreement (i.e. AGR) in Chinese and its presence in English has wide-ranging consequences, most fundamentally in the clausal structure of the two languages. Support for this idea comes primarily from the explanations which it allows for a variety of syntactic phenomena and, where possible, through testing the predictions that it entails for other languages which pattern either with Chinese or with English with respect to agreement.

The principles and parameters framework developed in Chomsky 1981 and Chomsky 1986a,b and pursued in the works of a number of other linguists provides the overall theoretical orientation. Parameterization plays a minimal role in the analyses proposed in the dissertation and relevant cross-linguistic distinctions follow largely from the interaction of principles of universal grammar (UG) with the divergent inventories of syntactic formatives in the languages considered, specifically from the availability of Agr in English as opposed to its absence in Chinese.

In chapter 2 some problematic differences between Chinese and English regarding constraints on the movement of subjects are examined. An account of these facts is proposed which traces the cross-linguistic variation to a difference in the clausal structure of the Chinese and English at S-structure. Specifically, subjects appear inside the VP in Chinese but outside the VP in English. This cross-linguistic difference is attributed to the demands placed on subjects in English by subject-verb agreement, demands which predictably are absent from Chinese due to the lack of agreement.

Chapter 3 is a study of a variety of problems posed by the non-gap topic (NGT) construction of Chinese. It is shown that these sentences raise problems for θ-theory, Case theory, and x-bar theory as well as the ECP and notions of licensing. The analysis proposed in chapter 2 is extended to account for NGTs; it is shown how this analysis entails an explanation for the differences between Chinese and English with respect to this construction. Predictions concerning NGT constructions in a variety of other languages are also tested.

The fourth chapter gives an account of why subjects in Italian pattern with Chinese rather than English with respect to the movement phenomena examined in chapter 2. Languages like Italian pose a prima facie counter example to the analysis of chapter 2, which ties long distance extraction of subjects to the presence or absence of agreement in a language. This would seem to predict that Italian, a language with subject-verb agreement, would pattern with English rather than Chinese. It is shown that this is only apparently the prediction and that other properties of Italian account for the subject extraction facts straightforwardly in a manner consistent with my analysis of Chinese and English.

[176] Wilbur, Ronnie Bring 1973
Advisor: Charles W. Kisseberth

The phonology of reduplication

In the analyses of many languages, reduplicated forms are often associated with irregular behavior. It is the prime interest of this dissertation to consider how to account for this behavior. Chapter One will present background information on Reduplication which is intended to familiarize the reader with the various types of Reduplication. Chapter Two will present examples of the types of "exceptional" behavior which reduplicated forms display. Chapter Three will discuss the methods which are currently used to analyze the "exceptional" behavior of reduplicated forms. In Chapter Four, I will present what I believe is the generalization which underlies this behavior and attempts to formulate this generalization within the current framework. Chapter Five suggests some revisions which can better accommodate this generalization. I will also consider the implications of this discussion on the status of Reduplication as a morphological process in the phonological theory.

[177] Wilkinson, Robert Webster 1971
Advisor: Braj B. Kachru

Sentence types and complement types in English

In this dissertation I will concern myself with the relationship between complement types and declarative sentences. I hope to present a unified and insightful account of the syntactic and semantic relationships between initial

S and S introduced by various recursive embedding phrase structure rules, specifically the initial S which is the deep structure for declarative sentences. Explication of and justification for these ideas and claims of course constitute the content of the remaining chapters of this dissertation.

Chapters II and III will be devoted to developing a formalism for handling independent declaratives and the complements in question in a unified way in the grammar. For the most part, the data on which this formalism is initially based is semantic in nature. Chapter IV sets forth the reasons for which the deep structure head noun fact analysis impedes a uniform analysis of independent declarative sentences and all the complement types which can be shown to be syntactically and semantically related to declaratives. After this the first argument against the adequacy of the deep structure head noun fact analysis as an explanation for semantic factivity is presented. A possible alternative analysis in terms of head noun act is introduced. In chapter VI it is shown that this "act" analysis will not save the general deep structure head noun analysis of factivity. The remainder of chapter VI is devoted to further refutation of such deep structure head noun analyses. Finally, in chapter VI we have a resume of the arguments of the two preceding chapters with a discussion of how the theory presented and exemplified in the first part of the dissertation can handle the problems brought up in them. A concluding summary and statement of the results of the dissertation and their significance is included.

[178] Willis, Bruce Edward 1969
Advisor: Robert B. Lees

The alternation of so-called learned/popular vocabulary in a phonological description of Latin American Spanish

This thesis consists of a phonological description of a portion of a dialect of modern Latin American Spanish. It is conducted within the framework of generative grammar. The description presented will incorporate abstract underlying representations and a number of phonological rules which account for various alternations in Spanish. The primary goal of this thesis is to show the relationship which exists between traditionally termed 'learned' vocabulary and 'popular' vocabulary. Traditional 'learned' vocabulary is generally not discussed in any detail in descriptions of Spanish because of its relatively uninteresting phonological development, but these forms can be accounted for historically and also synchronically. This thesis will present an analysis which covers a large portion of the vocabulary in which we find so-called 'learned' forms alternating with the 'popular' forms in related words. The aim of the thesis is to explain the synchronic relationship which exists between this learned and popular vocabulary without resorting to an ad hoc listing of the categories in which the morphological alternations occur. I shall propose a system in which roots and formatives will carry certain morphological features and certain phonological rules will be sensitive to the combinations of these formatives and roots. A second purpose of this investigation is to present a large body of data to test our phonological theory. It is hoped that detailed analyses of languages other than English will shed light on the adequacies and possible inadequacies of the universal theory. Problems will arise within this work and some solutions may be proposed.

[179] Wise, Kathleen Theresa 1979
Advisor: Howard Maclay

Levels of unity in production of long utterances in Laura

This dissertation focuses on unities in production of long utterances in a 22-month old, Laura, at other levels than the usual linguistic levels. The unities are partially modelled in real-time, using the Witz-Easley neo-Piagetian cognitive paradigm. Approximately 1,000 hours were involved in videotape analysis of the utterances.

The content of major chapters is as follows:

-IV establishes that Laura's language functioning is variable and complex.

-V discusses prosodic production, utterances in which many words in Laura's phrases exist in "embryonic form," as "whiffs" in the ongoing prosody, and utterances which are phrases often heard in adult speech. Prosodic production is a significant level of emergence for words, and suggests a conceptualization of long term memory of phrases as holistic entities.

-VI enlarges the picture of development of prosodic production by adopting a holistic-organismic perspective of the child. Developments in language functioning, such as prosodic production, are seen as a direct expression of expansions in Laura's "total effort" behind every utterance, her organismic-body-total.

-VII delineates four other levels of unity in Laura's production of long utterances. These are: Unifying motor flows, integrated complexes of motor activities in which one feels a single flow of energy at the 5-10 second level; pitch holding and intonational pushing, continuously re-emerging pitch heights across a phrase, and energy tension in the intonation contour to proceed forward over time throughout the phrase; carrying of meaning throughout the phrase, meaning processes held over periods of 5-10 seconds; and still-motor imaginal activity, a complex of thought processes and motor behavior preceding and leading directly into Laura's verbal production.

In essence, the dissertation seeks to understand and conceptualize some of Laura's language production processes in real-time.

[180] Wong, Maurice Kuen-Shing 1982
Advisor: Chin-Chuan Cheng

Tone change in Cantonese

The phenomenon known as *bianyin*, or 'tone change', in Cantonese as spoken in Hong Kong and Guangzhou, China involves an alternation between any of the six non-high tones and the high rising tone — or, for a very limited number of morphemes, the high level tone. This study gives an analytical account of the various types of tone change from both the synchronic and diachronic perspectives. After a description of the tone alternations, the Cantonese syllable and tone in Chapter 1, Chapter 2 works out an analysis of the regular cases and proposes an assimilation rule and a deletion rule in the synchronic grammar of Cantonese. Chapter 3 discusses the irregular cases of tone change and the various general tendencies, semantic and morphological,

that favor the occurrence of the changed tone. Chapter 4, bringing in comparative evidence from Taishan, Bobai, Mandarin and other dialects, presents the hypothesis that the changed tone historically derived from [ji55] — and [tsi35] — suffixation, and the diachronic changes involved are similar to the synchronic rules that account for the regular cases. Chapter 5 presents a quantitative analysis of all Cantonese morphemes that can undergo tone change. With the aid of the Dictionary on Computer (compiled by William S-Y. Wang and his associates), it is found that there are phonetic tendencies that favor tone change — namely, low tones favor tone change more than the mid tone, and low rising tone favors tone change (to a high rising tone) more than the other two low tones; and possibly also, long vowels favor tone change more than short vowels, and non-high vowels favor tone change more than high vowels. Chapter 6, based on William Labov's sociolinguistic studies of synchronic variations within a speech community, presents a quantitative analysis of data elicited under different stylistic contexts. The results show that the optional changed tone occurs more frequently in informal styles than in formal styles, and its occurrence is governed by a hierarchy of constraints similar to the phonetic tendencies found in the implementation of the diachronic change across the lexicon. Chapter 7 concludes the study with a discussion of the implications of the findings on theories of linguistic change.

[181] Wongbiasaj, Soranee 1980
Advisor: Frederic K. Lehman

On movement transformations in Thai

This dissertation is an investigation of the class of movement transformations in Thai. The main objective is to find out whether or not there are any limitations on this class of transformations, and in case there are, to see how the class is limited. The next objective is to explain why the class of movement transformations in Thai is limited in such a way.

The first objective is carried out by considering four constructions: the passive construction, the topic-comment construction, the quantifier-final construction, and the noun complement-final construction. I argue that the last two of these constructions have undergone movement transformations, Quantifier Floating and Noun Complement Extraposition, respectively. The other two are argued to be essentially base-generated instead of being derived by movement transformations, as claimed by some previous Thai linguists (Chaiyaratana 1961, Bandhumedha 1976, for instance). In particular, I argue that the passive sentence in Thai is generated in the base with *thùuk* (or *doon*) 'to be affected by' as a main verb and with a clause embedded under *thùuk* (or *doon*). I also argue that the topic-comment sentence in Thai is generated in the base with the topic in the initial position.

In the last chapter, other movement transformations that are likely to exist in Thai grammar are taken into consideration. It is found that none of these transformations involves movement of a whole NP. To achieve the second objective of this study, an explanation for such a limitation on the class of movement transformations in Thai is offered, with reference to the major characteristics of the language, namely, lack of the overt morphological marking on verbs and very little on noun phrases, and the pervasive use of zero anaphora. It is suggested for future research that other major characteristics of Thai, such as verb serialization, be considered in relation to limitation on movement transformations in the language.

[182] Xu, Debao 1992
Advisor: Charles W. Kisseberth

Mandarin Tone Sandhi — and the Interface Study between phonology and syntax

This dissertation investigates the domain and mode of application of Mandarin third tone sandhi (TS henceforth), in terms of which it is intended to explore the characteristics of the interface between phonology and syntax.

The general result is that TS applies cyclically both in the lexicon and at the phrase level. In the lexicon, it follows the model of lexical phonology. At the phrase level, its domain is partially constrained by the left end of a X^{max-b} (branching maximal projection), but finally defined by its unique condition: two by two subgrouping convention and its interaction with other phrasal phonological rules such as sentential stress assignment, secondary stress deletion, last cycle formation, 'marked' stress rules, rate of utterance, and so on.

The significance of the study is that it exemplifies the similarities between phrasal phonology and lexical phonology. On one hand, cyclic application is the characteristic of both phrasal TS and lexical TS. The rule (of TS) applies from right to left cycle by cycle both in the lexicon and at the phrasal level. On the other hand, phrasal TS operates in the same mode as lexical TS does. That is, after the application of TS in a cycle, the cycle boundary is deleted and the output of the cycle joins the next cycle as its input to create a new context for next TS (hence exactly the same model proposed by lexical phonology). This implies that the prosodic structure of a sentence is organized in the same way as that lexical structure does: namely, either with the right cycle (s) embedded in the left ones (such as Mandarin TS) on a par with the word composed of prefix + base ([prefix [base]]), or with the left cycle (s) embedded in the right ones (such as tone sandhi in Cantonese) on a par with the word formed by base + suffix ([[base] suffix]). The discovery of these similarities has significant impact on linguistic theory.

[183] Yates, Robert Allen 1990
Advisor: Howard Maclay

A parameters approach to second language research: Testing a directionality prediction of the null subject parameter

This study applies insights from present linguistic theory (Chomsky 1981, 1986) to predict what the influence of the first language (L1) is on the acquisition of linguistic competence in a second language (L2). Present linguistic theory claims that differences in languages can be captured by a small number of principles and parameters. Parameters are principles which have several values. Differences in languages are the result of how these values are set for a particular language. The parameter tested in this study is the null subject parameter. This parameter identifies the differences between a language like English which requires overt subject pronouns and a language like Spanish which allows null subject pronouns.

An analysis of the different types of parameters is made. This study presents an analysis of three types of parameters. Based on this analysis it is predicted that Spanish speakers learning English will acquire the properties of the null subject parameter in English before English speakers acquire the

properties of the null subject parameter in Spanish. Two different judgment tasks were administered to Spanish speakers learning English and English speakers learning Spanish. The results of the first task, a written grammaticality judgment task administered to classroom learners, confirmed the directionality prediction. The scores on judging sentences in the target language by Spanish speakers learning English were higher than the scores by English speakers learning Spanish. The results of a second task, a coreferential judgment task administered to highly proficient L2 speakers of Spanish and English, did not confirm the results of the written grammaticality judgment task. Both groups of advanced L2 speakers appeared to transfer interpretations from L1 sentences to equivalent L2 sentences.

Although these results raise questions about the status of the null parameter in L2 acquisition, they provide evidence that the L1 does influence the acquisition of a second language.

[184] Yen, Sian-Lin 1965
Advisor: Robert B. Lees

Studies in the phonological history of Amoy Chinese

As the title of this dissertation would indicate, the main portion of the present study concerns the reconstruction of the phonological history of Amoy Chinese — more specifically, a reconstruction of Old Amoy, the phonological changes that have taken place in its history, and the chronological order of these changes. The period covered by our studies is from circa 700 A.D. down to the present time. The materials utilized for our reconstruction are mainly lexical items borrowed from a certain identifiable dialect at a certain identifiable date.

First, we shall concern ourselves with the problem of the date at which the words that now constitute the superstratum, 'literary layer,' of Modern Amoy were introduced into this language from Ancient Chinese. In Chapters II and III we shall discuss, first, the phonemes of Modern Amoy and its morpheme structure rules; then, the problem of how to represent tones of this language in our phonological representations; and finally we shall discuss various types of phonological boundaries and sketch syntactic rules that introduce these boundaries into our phonological representations of Amoy utterances. In Chapters IV and V we present the phonetic correspondence between Ancient Chinese and Modern Amoy. Ancient Chinese forms are cited in the orthography proposed for this language in Chapter III. In Chapter IV we shall present a set of (partially) ordered phonological rules, by means of which one can derive Superstratum words from their respective etymons in Ancient Chinese in the maximally economical way. Finally, in Chapter VII, we attempt a reconstruction of Amoy Chinese of c. 700 A.D. — i.e. around the time when there was a large-scale borrowing of Ancient Chinese words into Amoy. Our reconstruction is based on the systematic phonetic differences that we have found between Substratum initials and finals and their corresponding initials and finals in Superstratum when compared through the medium of Ancient Chinese or, in a few cases, Archiac Chinese initials and finals. With the help of various rules that we have formulated in the preceding chapter — which are, with some exceptions that we have noted, phonological changes that occurred within the history of Amoy Chinese, and hence must have affected both words from Old Amoy and those from Ancient Chinese — we should be able to project the phonetic differences that now exist between

Substratum and Superstratum of Modern Amoy back on Ancient Chinese of c. 700 A.D., and reconstruct Old Amoy of approximately the same period.

[185] Yeoh, Chiang Kee 1979
Advisor: Yamuna Kachru

Interaction of rules in Bahasa Malaysia

In this dissertation I will investigate interaction of rules, such as, Object-creating rule (i.e. Transitivization, Objectivization, or Dative Movement) with Passivization and also Passivization with Relativization, which can systematically advance an NP, for example, an Instrumental, from an inaccessible to an accessible position, that is, to Subject position whence it can be relativized. On account of the fact that, in Bahasa Malaysia, Object-creating rule is regarded as essential to making an inaccessible NP, such as, Oblique Object, accessible to Passivization; and Passivization is seen as absolutely necessary to making an inaccessible Direct Object accessible to Relativization, interaction of rules such as these which confirm Johnson, Keenan and Comrie's hypotheses will be fully discussed.

This thesis is organized as follows: In Chapter I, inadequacies of the description of some aspects of Bahasa Malaysia syntax are pointed out. Chapter II concerns the simple sentences in Bahasa Malaysia. Various types of simple sentences such as equative, ascriptive, locative, intransitive, stative and transitive are examined and discussed. The claim that it is optional to prefix the active marker /meng+/ to a transitive verb of an active sentence is falsified.

In Chapter III, five types of Passives in Bahasa Malaysia are critically examined and discussed. Inadequacies of the past treatments of some passive constructions, especially the 1st and 2nd Person Passive, are pointed out; and syntactic similarities found among the various types of Passives are clearly illustrated. Since Indirect Object and Oblique Objects such as Benefactive, Locative and Instrumental are not passivizable, interaction of rules, such as Object-creating rule with Passivization, is extensively discussed. It is shown that Bahasa Malaysia is in harmony with the Relational Constraint proposed in Johnson (1974), that is, if an Oblique Object can be systematically advanced to Subject position, Indirect Object and Direct Object can also be systematically promoted to Subject position.

The last chapter illustrates that, as far as Keenan and Comrie's Accessibility Hierarchy (AH) is concerned, only two NP positions in Bahasa Malaysia, that is those of Subject NP and Poss-NP, can be relativized directly. The other NPs lying in the hierarchy gaps between the Subject NP and the Poss-NP are relativizable only after they have been systematically advanced to an accessible position by interaction of rules. Since only the Subject NP and the Poss-NP can be relativized directly, it is concluded that Bahasa Malaysia not only poses a problem but also presents a good counterexample to Keenan and Comrie's AH as far as direct relativizability of an NP is concerned. This is simply because direct relativizability of a low NP position, in this case, does not entail direct relativizibility of all higher NP positions on the AH.

[186] Yokwe, Eluzai Moga 1987
Advisor: Charles W. Kisseberth

The tonal grammar of Bari

This thesis presents a comprehensive description of the tonal system of Bari, an Eastern Nilotic language spoken around Juba in the Sudan. In particular, the thesis attempts to thoroughly describe both the tonal structure of the Bari word as well as the tonal interactions that result from the juxtaposition of words in sentences.

The tone of verbal roots as well as the tonal properties of the extensive system of verbal derivation in Bari is presented in detail. Bari verb roots are shown to display "melodic" tone: there are just two (underlying) tonal patterns — H and LHL — regardless of the syllabic length of the root. Some verbal suffixes are "toneless" whereas other suffixes contribute a tone to the tonal tier of the word. Bari noun roots are "non-melodic": each syllable of the noun root selects from the underlying inventory of tones independently of the other syllables. The tonal properties of noun suffixes are complex and straightforward rules governing the tone of derived nouns are not possible.

The bulk of the thesis details the effect that the tone of one word has on an adjacent word. Two principal rules operate across word boundaries: High Tone Spread and High Tone Lowering. A rule of Contour Simplification applies to the output of these two rules. It is shown that the rule of High Tone Lowering must apply iteratively across the sentence in a left-to-right manner. Evidence in favor of iterative rather than (syntactically) cyclic rule application is presented in detail.

[187] Yoon, Hye Suk 1989
Advisor: Peter Cole

A restrictive theory of morphosyntactic interaction and its consequences

In this dissertation, I develop a theory of morphosyntactic interaction based on a principled distinction between Rule Systems and Grammatical Components. It is argued that while morphological and phrasal rules belong to distinct rule systems, they do not define distinct components. In contrast to the proponents of Strong Lexicalism, I develop a theory in which the components of syntax and lexicon are freed from inherent association with either phrasal or morphological rules. Rather, the lexicon and syntax stand in a "level-ordered" relationship with the objects defined by rules of the lexicon acting as atoms of the syntactic rule system.

The assignment of rules, morphological or phrasal, to either component, is made on the basis of the properties exhibited by rules, such as interactivity with other rules of the component and the X0 vs. XP status of objects defined by rules. In contrast to much recent work, the decision to treat a certain type of morphology as syntactic is not made on the basis of an a priori methodological guideline.

The criteria I employ to assign a certain piece of morphology to syntax are more stringent than those countenanced in alternative approaches. It is argued, however, that this restrictive approach reveals a truer picture of how morphology and syntax interact. This is because morphology determined to be syntactic by the restrictive criteria always evince independent signs of being syntactic.

A comparative study of the morphosyntax of nominalizations and antipassives in different languages bears out the significant conceptual and theoretical advantages of the restrictive view of morphosyntactic interaction proposed in this work.

[188] Yu, Ella Ozier 1991
Advisor: Jerry Morgan

Theoretical aspects of noun classes in Lama

Lama is a Gur language spoken in the districts of Keran and Doufelgou of Togo. Other than earlier research by A. Prost (1964b), the field of linguistics has not given much attention to Lama. More recently, though, dissertations by Ourso (1989) and Aritiba (1989) have contributed significantly.

This dissertation provides an analysis of the noun class system and agreement phenomena in Lama (Kante variant). Furthermore, the incorporation process for borrowed nouns and the agreement phenomena for left-dislocated coordinate NP structures support the analysis that Lama noun classes, for the most part, are not semantically or phonologically based.

The dissertation contains six chapters. The introductory chapter classifies Lama with respect to geographical and typological categories and discusses relevant research and methodology. Chapter 2 presents the reanalysis of the noun class system and Chapter 3 summarizes the agreement phenomena of nouns and their constituents. The fourth chapter contains an analysis of the borrowing process for nouns and Chapter 5 discusses agreement in left-dislocated coordinate NP structures. The final chapter summarizes the findings of this research and proposes further research areas.

[189] Zamir, Jan Roshan 1982
Advisor: Braj B. Kachru

Variation in Standard Persian: A sociolinguistic study

This research aims to investigate variation in Tehrani Persian (Standard) in relation to its socio-cultural dimensions. The primary objective is to investigate stratification of glottals and glides and the general tendencies of these features towards linguistic change, as well as the social mobility of speakers. The secondary objective is to investigate the sociolinguistic properties of two social dialects of Persian in Tehran, which until now have gone virtually undescribed: Jaheli and Armenian Persian.

The analysis is based on quantitative measurements of the data collected from seventy-eight native speakers with consideration to age, education, sex, religion, and ethnic membership.

To account for variabilities, four variable rules were advanced: (y)-insertion, (ʔ)-insertion, change of glottal to glide, and (ʔ)-deletion rules. Style and religion most strongly co-vary with the linguistic variables; education and age also closely correlate. In comparison, sex shows a lesser degree of correlation with the variables.

This inquiry further offers a number of interpretations for certain previously unresolved issues in Persian linguistics: (a) Two types of glides — "underlying" and "derived" are distinguished. (b) A distinction is also advanced for "underlying" and "derived" glottals. Derived glottals can change to glides; the underlying cannot. (c) The two rules of (y)-insertion and (ʔ)-

insertion appear to reflect a functional unity of P-rules and provide a case example of a "conspiracy of phonological rules" (Kisseberth, 1979). (d) The change of glottal to glide is a new innovation and still is "in progress."

The social dialect of Jaheli is shown to make use of an elaborate speech of give-and-take with overt phonological characteristics. Some features of Jaheli are emulated by other members of the community also to express certain values and chauvinistic sentiments.

Armenian Persian appears to provide a rather "marked" sociolinguistic case study. Unlike that of all other subsequent generations of dialect speakers in Tehran who yield to the prestigious dialect of Tehran, this variety has remained unbending.

Finally, the results here could be used for the preparation of teaching materials and bilingual lexicographical works.

[190] Zhou, Xinping 1990
Advisor: Chin-Chuan Cheng

Aspects of Chinese syntax: Ergativity and phrase structure

This thesis is a study of various aspects of Chinese syntax from a government-and-binding perspective. The purpose of this work is to argue that a range of grammatical problems of Chinese syntax such as the variable position of subject, word order variation, locative inversion, definiteness effects, quantification and scope effects of inverted subjects can be explained if it is recognized that Chinese has both unergative (accusative) and ergative-type structures. In the unergative (accusative) structure, the subject NP bears the role of an internal argument of the verb and as such occupies the object position at D-structure and is either moved or unmoved to the spec (IP) position at S-structure in accordance with a set of well-formedness principles of the grammar.

Chapter One introduces some basic notions of Government-Binding theory and the theories of ergativity in general, and argues for a unified theory of grammatical mapping between the argument structure and syntactic structure, which accounts for a comprehensive range of ergative phenomena across languages.

Chapter Two provides arguments for taking contrastive word order in Chinese as the primary syntactic diagnostics for ergativity in this language and explores the unergative-ergative alternations with regard to word order variations. It proposes a theta-theoretic condition, the 0-polarity condition which regulates the distribution of arguments and adjuncts in this language. A scrutiny is devoted to the difference in categorical projection with respect to functional categories and lexical categories.

Chapter Three explores the range of ergativity in Chinese in phrasal syntax, with emphasis on the displaced subject and locative inversion construction. It argues for a type-oriented approach to ergativity across languages. Alternative analyses are provided for some syntactic problems related to the Chinese ergative constructions, ranging from the syntactic nature of postverbal agentive subject to the scope and extraction effects in presentational construction.

Chapter Four examines the syntactic nature of complex predicates in Mandarin and the ergative phenomena on the word level, focusing on the

headedness condition of causative verb compound predicates as well as the thematic structure of such predicates.

[191] Ziv, Yael 1976
Advisor: Georgia M. Green

On the communicative effect of relative clause extraposition in English

In this dissertation I will investigate some possible correlations between the form of sentences and the communicative purposes which these sentences may serve. For such a study to offer interesting and significant results it would have to involve a large variety of sentences differing from each other in several aspects related to form, and it would have to focus on various communicative functions that these different sentences may fulfill. General observations concerning the nature of the relationship between the form of a sentence and the way it may function in linguistic communication may be arrived at only on the basis of an extensive investigation of this kind. Such a study, however, although desirable, is presently beyond my capacity. Therefore, I decided to examine only an arbitrary sub-set of syntactically related constructions — sentences related by Right Movement Rules — with respect to their various communicative functions. However, after studying in detail sentences related by only one such rule — relative clause extraposition — I realized that it would not do justice to the other constructions involving Right Movement Rules to include them in this thesis without examining them equally carefully. The scope of the present study will, therefore, be restricted to an investigation of only two types of constructions related by the syntactic process of relative clause extraposition. I will be most concerned with the purposes for which speakers may use sentences with restrictive relative clauses (extraposed and unextraposed) in communication with each other; more specifically, I will deal with the differences between the appropriateness of such sentences with regard to conveying particular communicative intentions of speakers.

As will become evident during the course of this thesis, the communicative effects of the syntactic process of relative clause extraposition are closely related to the principles of word order in a given language. Hence, languages which differ in word order are likely to manifest different characteristics with respect to relative clause extraposition. I will, therefore, restrict myself here to an examination of sentences with restrictive relative clauses in English. (But cf. Ziv and Cole (1974) and Ziv (forthcoming) where Modern Hebrew is investigated with respect to relative clause extraposition and other related phenomena.) The present thesis should be considered exploratory; it does not aim at offering definitive conclusions, but rather at encouraging inquiry in the area of form-function correlation. Hopefully, the results of this investigation may serve as a starting point for a more comprehensive study of this kind.

The thesis is organized as follows: In Chapter I, I delineate the scope of the structures under investigation, discuss the theoretical framework within which this research is conducted and present the kinds of questions with which I will be most concerned. Chapter II deals with various communicative functions of sentences with restrictive relative clauses that modify generic head noun phrases. In this context the differences between sentences with extraposed and sentences with non-extraposed restrictive relative clauses are examined. Chapter III serves as a continuation of Chapter II; it takes up the

question of the relation between conditional if sentences and sentences with restrictive relative clauses on generic heads. It is shown that an account of the relation between these structures in derivational terms is ad-hoc in several respects and consequently a new account for the affinity between these sentences is called for.

Chapter IV is on par with Chapter II. In Chapter II the communicative functions of sentences with restrictive relatives on generic heads are investigated, whereas in Chapter IV some communicative functions of restrictive relative clauses on indefinite no-generic heads are examined. In this context it is shown that in order to characterize some form-function correlations adequately, the pragmatic correlates of the relevant propositional content must be taken into consideration.

Chapter V consists of a brief summary of the conclusions from the previous chapters, a discussion of the overall communicative effect of relative clause extraposition and a discussion of some unresolved problems and suggested topics for further research.

Master's Thesis Abstracts

[192] Abdo, Daud A. 1967

On primary stress in Modern Literary Arabic

In this paper I shall deal with the primary stress of words in Modern Literary Arabic (henceforth MLA). I shall first mention briefly some attempts to account for the primary stress of words in MLA and show in what way they fail. Then I will try to give some rules to account for this stress correctly.

[193] Akatsuka, Noriko 1969
Advisor: Robert B. Lees

NP Movement and some related syntactic phenomena in Japanese

Ross's quite insightful and stimulating Ph. D. dissertation *Constraints on Variables in Syntax* motivated this paper. His dissertation is a search for universal constraints on syntactic variables. The complex NP Constraint and the Conjoint Structure Constraint are proposed as putatively universal, and the Sentential Structure Constraint as language-specific. Also, the type of syntactic rules affected by those constraints are said to be reordering transformations which chop the specified NP and permute it around a variable. I would like to investigate whether or not Ross's claims are justified in Japanese.

First, I would like to discuss "NP scrambling" in Japanese, which does not exist in the grammar of English. Second, I will touch on three Japanese reordering transformations which make crucial use of variables: NP Shift, Topicalization, and Cleft-Sentence. Their behavior with regard to Ross's constraints will be investigated. Third, I would like to analyze the Japanese rule of Reflexivization.

[194] Awóyalé, Yíwolá 1974

Gerundive structures in Yorùbá and the notion of "target structures"

The hypothesis of target structures is that each language has a relatively small set of "target structures" — a set of constraints which apply at some relatively superficial level, as a sort of filter on derivations. The correctness of such a hypothesis may explain why in natural language diverse underlying structures are mapped onto the same or similar superficial structures. Whether such structures are similar in all languages, or each language has its own unique set, is not quite clear at the moment until comparative studies are conducted. It is a fact that the underlying structures may be the reason why we have so few superficial word order patterns in natural languages. The possibilities are so few that one would expect diverse structures to converge on the surface. Yet the convergence is not random; it has to be systematic, otherwise there would be no possible explanation for such a phenomenon. This further implies that the rules that create such structures would be expected to share some properties too. And finally, the correctness of the notion of target structures should throw some light on the phenomena of opacity and transparency in grammar.

These structures are the type which assume the same configuration at the surface but which derive from very different logical or semantic structures. There are at least four ways to deal with this phenomenon. Each of the

prevailing approaches will be looked at here in relation to the Yoruba data after the data itself has been presented.

[195] Baker, C. LeRoy 1965
Advisor: Robert B. Lees

Definiteness and indefiniteness in English

My purpose in this paper is to give a formal characterization of the notions of definiteness and indefiniteness which are found in virtually all traditional English grammars. My aim is to develop a system of rules which will predict the correct English articles on some other basis than simply that of freely choosing between, say, *and* and *the*. Many transformational grammars have dealt with articles by means of rules such as

1) DET → {a, an, the} or 2) DET → [+def].

These grammars are then forced to include a set of context-restricted rules in their phrase structure which prevent occurrences of definite noun phrases in sentences where only indefinites can occur, and vice versa. The viewpoint I have adopted as a working hypothesis is precisely the reverse, namely, that articles in English are highly predictable on the basis of other, more fundamental, grammatical relations expressed in the phrase structure, and hence need not be specified independently in the phrase structure at all.

As a result of this kind of work, I have arrived at a rough analysis for English in which nouns need not be distinguished as between definite and indefinite in the phrase structure rules. The following is a brief summary of the generalizations which I will eventually draw in the course of this paper.

I. All indefinite noun phrases arise from underlying existential sentences.
II. There is a large and well-defined set of occurrences of definite article plus noun in which the definite article can be analyzed as the overt marker for the presence, in the same or in a previous tree, of an existential containing the same noun.
III. The difference between those indefinites which are given a specific interpretation and those which are given a non-specific interpretation is explained by a mechanism associated with certain embedding rules which delete previously existing reference markers.

[196] Barker, Milton E. 1969

Muong Clause Structure

The purpose of this paper is to describe the internal structure of clauses in Muong. Muong is a language spoken by a minority group of approximately 400,000 people in North Vietnam, mainly in Hoa Binh province. The analysis presented in this paper is based on the author's knowledge of the Muong language gained while residing in the Muong refugee village of Hoa Binh, near Baumethuot, South Vietnam, from 1961-1963 and 1966-1969. Examples given are drawn from recorded text material.

[197] Boyle, Mary Et 1988
Advisor: Michael Kenstowicz

Applying machine learning algorithms to phonology

Consider the problem of discovering a rule characterizing a given sequence of events (objects) and being able to predict a plausible continuation of the sequence. This prediction is nondeterministic because the rule doesn't necessarily tell exactly which events must appear next in the sequence but rather determines a set of plausible next events. It is assumed that the individual events in the sequence are characterized by a set of attributes and that the next event depends solely on the values of the attributes for the previous events in the sequence. The attributes are either initially given or derived from the initial ones through a chain of inferences.

This paper describes briefly an inductive incremental learning program AQ 15 that learns attributional descriptions from examples, and the representation models used to describe syllable structures and the results of applying AQ 15 in this domain.

The evaluation will be done from the viewpoint of classification accuracy of the induced rules on new forms and complexity of the rules. Examples will be taken from the major phonemic groups with known syllabification. The induced rules will be tested for accuracy against the known data.

The data is represented utilizing the encoded concepts of the sonority hierarchy and syllable structure (onset, nucleus, and coda). The program would then be able to induce the appropriate syllable parsing rules given a handful of examples.

[198] Carlsen, Joanne 1970

Notes on adverbials in Greek and English

The complex and subtle nature of adverbials has long presented problems to any linguist attempting to deal with them. In his thesis (1969) Mike Geis proposed that most adverbial clauses fall into the larger and better defined categories of relative clauses and complement clauses. The merit of such a proposal rests not only on the validity of the arguments which support it, but also on the usefulness of the ideas which motivate it. In this case, the motivation is to place adverbials into a category which we know something about and which, therefore, gives us some sort of basis for judging the various and odd ways adverbials act.

I am not interested here in whether Geis' proposal and thesis are successful or not. That I subscribe to his general approach will be obvious from my own. What I intend to do in this paper is to explore in Greek and English the reactions of two classes of verbs which I have isolated because of their distinct reaction to certain features of adverbial clauses. In so doing, I also will explore the nature of *why* and *because*-clauses. Lastly, I shall explore Greek *there-where* clauses. This is not a paper on Greek adverbials, or on English adverbials, but rather a paper on whatever I can find out about adverbials in the fields I explore. I expected Greek to extend or verify, where it differed from English, our description of the behavior of adverbial facts — and this is in fact what happened. In the case of *there-where* clauses, however, which occur frequently in Greek, but only rarely in English, I concentrate on describing the Greek data.

[199] Chen, Ching Hsiang 1969
Advisor: Michael Geis

Something to add to Chinese conditions box

This paper is written in response to Ross's dissertation in which he proposes that there should be constraints on syntactic rules which make crucial use of variables. These constraints could either be language universal or language particular. He further suggests that the present theory of grammar should be so revised as to incorporate a condition box for each language so that a generalization could be made about the language-particular conditions on the rules of the language.

The necessity of using variables in syntactic rules and the necessity of restrictions on the variables so that the rules will drive correct results are well-stated in Ross's work. What I want to add is that the kind of language-particular constraints somehow classifies the type of language as a "rigid-word-ordering" language as in the case of Chinese.

I limit the scope of this paper to those rules which involve reordering transformation and feature-changing rules. The paper is organized in the following way. In section II, I will discuss some reordering rules, which lead to the conclusion that certain constraints on them are necessary to be included in the Chinese condition box. In section III, I will disuss some feature-changing rules and try to state the constraints which seem to be operating on them. In this section Pronominalization will be discussed in greater length and the condition on "backward" Pronominalization will also be explored. Section IV is a brief conclusion.

[200] Colberg, Thomas 1975

Movement rules and negation

In many proposed derivations, various operations seem to have moved negatives and/or sentential elements containing negatives out of their original positions in deep or logical structure. In the first two substantive sections of this paper, rule ordering provides technically correct explanations of the pattern of sentence acceptability. In the third, rule ordering is inadequate. Since the solution in the third case also suffices in the first two, it is preferred over rule order. The remainder of the paper takes up other cases involving negatives that show similarities to the first three.

[201] Cüceloglu, Emily Y. 1967

Subject pronouns in direct address: Judeo-Spanish

This study will examine pronominal phenomena in Spanish along two basic lines. One is the dialect study, since its starting point in empirical data is a series of Judeo-Spanish texts consisting mainly of folk-tales told by Sefardic Jews in Istambul to M. L. Wagner and transcribed by the latter in the early twentieth century. Pronominal usage will be compared with standard Spanish, specifically with the results found by T. A. Wilson in his M.A. thesis investigating choice and non-choice of the explicit pronoun in Spanish-American Spanish as found in three plays and the conversational parts of a novel. His data differ from ours in three obvious respects: a) time — mid-twentieth century, b) nature of materials — written rather than oral, c) dialect

— Spanish-American. For this reason we will also consider briefly Spanish usage of the time of the exile of the Jews from Spain, and we will choose a text which is informal and colloquial, in so far as such is available from that period. However we will not attempt an extensive dialect comparison between the Spanish-American materials and the Judeo-Spanish. We will assume that the Spanish-American data represent standard Spanish in all relevant aspects.

Secondly, we will try to account for the results where appropriate, with such rules as would form part of a grammar purporting to properly generate Spanish. In the process of arguing for these rules we hope to show how and why previous analyses are adequate or inadequate.

[202] Donaldson, Susan Kay 1971

Movement in restrictive relative clauses in Hindi

The particular research with which this paper is concerned has to do with the matter of what roles rules of movement may play in determining the surface shape of restrictive relative clauses in Hindi. While much remains inconclusive about generalizations to be gained from this study, I think we can say that word order in Hindi is more restricted than in a thoroughly inflective language, but at the same time more free than in a language which determines syntactic relationships solely from word order. This greater freedom is exercised by the speaker in his choice of position with the S for the relative clause, and in his choice within the clause for the relative pronoun. It appears that the grammar contains the necessary mechanism for moving the clause containing the presupposition to either sentence-initial or post-main clause position from wherever it arises, and that this movement can be vacuous in case the underlying order is that of the surface manifestation.

[203] English, James B. 1971

French: How to predict the stress

The purpose of this paper is to show that French can adequately be described by positing only seven vowels instead of fourteen (seven tense and seven lax). I will discuss vowel alternation and then propose another interpretation of French stress without attempting to analyze the former problem. The paper concludes that stress is always ultimate in French due to the existence of a stress rule much like that of Spanish (Harris 1969) and the rule PSVD, which deletes all vowels after the stress.

[204] Foster, James Frederick 1967
Advisor: Henry R. Kahane

Over Konyunctiveyt in AR talk: About subjunctiveness in Germanized Ozark English

The purposes of this paper are threefold: a) to present data about the uses of the so-called konyunktiv verb forms of the Germanized Ozark dialect of American English, b) to give a reasonable description of this data in the context of a transformational generative grammar, and c) to point out and discuss as yet unsolved problems in accounting for the data in a descriptively and/or explanatorily adequate way. I have used myself as an informant where possible, as I speak this dialect quasi-natively. With my honored father I have also consulted as this is his native dialect. My final authority has been the Lady Peter Schärmer, Sr., of near Scranton, Arkansas, who was born and

reared in the district and who has never been out of it for more than a few days at a time — unlike my father and me — both of whom have travelled considerably in other areas.

[205] Gilpin, Mariellen O. 1965
Advisor: Robert B. Lees

A partial grammar of English superlatives

There are two primary goals of an optimal grammar of superlatives in English: to account for the phenomena of superlativization in a maximally simple, productive set of ordered rules, and to relate those rules to more general phenomena in the grammar. Specifically, if we can find a grammatical basis for the native speaker's intuition that the comparative and superlative are related in some way, justifying in some sense the traditional paradigm tall, taller, tallest/ beautiful, more beautiful, most beautiful, the resulting grammar will be so much the closer to achieving the second goal of linguistic theory. It is clear upon the most cursory examination, however, that such a relationship is not a simple or obvious one. This paper will attempt to show that deep similarities do exist, and to point out where they may be found.

[206] Hammerschlag, Doris 1967

On the notions subject, predicate, and universals

It seems that some linguists may be overlooking the need for observational and descriptive adequacy in their grammars. A quick look at the past studies of Malayo-Polynesian languages shows that there is a tendency either to try to make the languages look exactly like English or to neglect the possibility that they might have anything at all in common with English. We cannot attack languages with the view that they are identical or that they are completely different.

The similarities we do find by working on the languages individually will be more substantial for the support of universals than those found by basing analyses on English. And, of course, we wish to describe the differences between languages as well as the similarities among them. Basing new grammatical descriptions on English is just as sinful as basing description of English on those of Greek and Latin.

[207] Hutchinson, Arno M. Jr. 1966

Classical Greek phonology: Vowel contractions

The purpose of this paper is to lay a foundation for the diachronic study of Ancient Greek phonology from a transformational generative grammar approach. It was felt that before we should launch into the broader area of diachronics we ought first to get a fair idea of the phonological system of one dialect in one period. For this purpose we chose what is, perhaps, the best studied dialect, Classical Attic.

It may be in place at this point also that we should explain why we have chosen to approach Ancient Greek phonology through transformational grammar. It might be concluded by some that such a well studied language as Ancient Greek could serve as little more than a practice board for scholars in transformational grammar. In actual fact I believe that this relatively new

approach can contribute a great deal to our better understanding of language in general.

[208] Ito, Katsutoshi 1968
Advisor: Henry R. Kahane

The nature of wa and its relation to Japanese negation

The postposition *wa* has long been supposed to be simply a topicalizer of a sentence. The purpose of this paper is to show that *wa* has a function of bringing "contrast" into a sentence and that the contrastive function of *wa* can most adequately be described by assuming a "shadow sentence" in the underlying structure. We will argue that the introduction of a shadow sentence in the underlying structure will provide adequate description of such postpositions as *ma* 'also' and *dake* 'only' and the occurrence of *wa* in negative sentences.

[209] James, Dorothy J. 1966
Advisor: Robert B. Lees

A phonological cycle in Siane

The purpose of this paper is to show the value of ordered rules and the need for a cyclical application of a subset of those rules in the phonological component of a transformational-generative grammar of Siane, a language of the New Guinea Highlands. Motivation for each rule and its specific ordering is given in sections two and four, and motivations for a phonological cycle is shown in section three. In the appendix the ordered rules are listed together followed by the full derivation of every example not fully derived in the body of the paper.

[210] Janjigian, Sona 1972

The PIE consonant shift in Armenian dialects

The consonant shift from Proto-Indo-European in Classical Armenian is similar to the consonant shift that independently took place from PIE in Germanic. As in the Germanic languages, secondary and tertiary shifts took place in the various dialects of Armenian. Some scholars including Gharibian and his followers postulated that some of the Modern Armenian dialects evolved through sister dialects of Classical Armenian rather than directly from it. In doing so, they rejected the consonant shift phenomenon.

In earlier versions of this paper I tended to agree with Gharibian's view. However, I have come to realize that Classical Armenian is the older dialect that underwent the first consonant shift. Because of the absence of earlier written documents in Armenian it is impossible to follow the various stages of the development of Armenian consonantism extending from the PIE period to the first translation of the Bible in the fifth-century AD. Gharibian's view can best be refuted by considering the historical background of Armenia and the nature of the internal and the external influences to which the speakers of Armenian became exposed. Following this a brief discussion of the consonantal outcome in Classical Armenian will be given and then the problem will be discussed in more detail.

[211] Jessen, Marilyn 1969
Advisor: Frederic K. Lehman

The comparative construction in Shan

Shan or Thai Yai is a language (or group of dialects) spoken in the Shan States of Burma and Yunnan, with some speakers in the Mae Hong Son area of northwest Thailand. It is usually grouped together with Thai and Laotian into the Kadai or (Kam-Thai) family. The number of speakers of Shan is estimated to be around 1,350,000.

This paper is an attempt to give a grammatical characterization of the comparative construction(s) in Shan within the framework of a transformational-generative grammar. Much of what is to be presented here will be of a purely observational nature, either because any deeper a treatment of it would be well beyond the scope of this paper or because the writer knows just too little about it to say anything of interest or significance. However, it can only be hoped that the many problems hinted at or left unsolved in the course of what follows will provide starting points and motivations for others beginning work on the Shan language.

[212] Jolly, Richard John 1968
Advisor: Henry R. Kahane

The Plautine noun phrase

Most previous studies of Latin word order have taken the view that, although Latin word order is "freer" than most languages, certain patterns or regularities can be noticed which would allow one to formulate what I would call nothing more than "rules of thumb." Since Latin grammars have neglected to discuss word order in anything other than generalities, this is the one area in which the grammars can be supplemented and it is also the topic to which I direct this paper.

I have chosen the comedies of Plautus as the basis of my study. With Plautus we can establish structural description of a spoken Latin ideolect at a fixed period of time. The general scope of this paper will be to present the predominant patterns observed in the noun phrase and to indicate various problems involved in the structural description.

[213] Kajiwara, Hideo 1985
Advisor: Seiichi Makino

A study of stative expressions

There are two ways to describe an object. One can speak of an object actively, as in "A dog is running toward us", or statively, as in "That dog is ferocious." In this thesis I compare active and stative expressions in English and Japanese. In particular, I offer examples to show that determining whether a phrase is active or stative depends on context. I will focus on the stative verbals used in English and in Japanese, and the relationship between ASPECT and STATE.

This thesis consists of five chapters including a conclusion. In chapter one I discuss the claims of six linguists, namely Lakoff, Kuno, Alfonso, Martin, Teramura and King. This leads to twenty-three questions for discussion. I divide these questions into five categories, and in chapter two I discuss the first three of these. In chapter three I address three questions concerning

stative and nonstative verbals. This requires making some additional definitions. In chapter four I analyze the remaining question concerning the relationship between stative transitive verbs and the Japanese nominative case-marker GA. I tie these results together in the concluding chapter.

[214] Kim, Sun Boo 1982
Advisor: Howard Maclay

Acquisition of English as a Second Language for Korean children in declarative and interrogative sentences

This research will investigate the second language acquisition processes of two Korean children in their performance of declarative and interrogative utterances in English. In declarative utterances, the acquisition order of grammatical morphemes will be studied, based on Brown's (1973) framework that represents the semantic relationships of Fillmore's (1968) case grammar. In interrogative utterances, inversion of yes/no questions, WH-questions, and do-support including models are to be investigated.

This research on second language acquisition was based on the hypothesis that (1) high frequency of input would not play an important role; (2) semantics would be a significant consideration but not imitation; (3) development of intelligence or perception would be one of the most important factors; and (4) ego-centrism or nearness would influence second language acquisition for pre-school children.

[215] Koul, Omkar N. 1971
Advisor: Braj B. Kachru

Coordinating conjunctions in Hindi

In *An Introduction to Hindi Syntax* Y. Kachru devotes a brief section to the discussion of conjunctions in Hindi. While making some remarks on the coordinate conjunction structures in Hindi, she refers to the "general rule" that the strings conjoined by conjunctions must have 'like' structures.

The nature of deep structure constraints on coordinatedly conjoined sentences in Hindi has not been studied in any work so far. Both transformational and deep structural constraints must be formulated to apply to all conjuncts of a coordinate structure in Hindi. It is equally important to study different types of coordinately conjoined structures for determining the deep structure of sentences or parts of sentences which can be conjoined by the coordinate conjunction morpheme ø r. Here I intend to make some remarks on the different types of coordinated conjoined structures, and to point out some deep structural and transformational constraints on such structures which can be conjoined coordinately with ø r.

[216] Langacker, Ronald W. 1964

Some embeddings and interrogatives of French

The purpose of this paper is to propose a theory accounting for selected portions of the grammatical structure of French. These include a large but by no means inclusive body of interrogative expressions, a number of related generalized transformations projecting the output of the rules comprising this theory into an infinite set, and a fairly elaborated though admittedly rough constituent structure component describing a finite set of strings together

with their structural descriptions, constituting the domain over which the transformational rules are defined.

As with any theory, its claims are only tentative and approximate. There are no complete descriptions, and there is always some artificiality and oversimplification involved in dissecting out some part of the body of data in order to describe fully that part. Therefore the rules presented here do not constitute a closed system. They are obviously inadequate in many respects, and an attempt has been made to point out some of these inadequacies as well as to indicate possible ways of extending this theory to account for a fuller body of data. The noun expansion rules, for example, clearly will not survive deeper analysis as they stand, although it is hoped that they will have contributed something towards a satisfactory treatment. The scheme of verb classification is proposed more seriously. Although naturally incomplete, the main outlines of it are probably valid.

[217] Leich, Harold M. 1971

Patterns of verbal accentuation in Slovene

The aim of this paper is to investigate the basic pattern and broad outlines of the accentual system of the standard Slovene conjugation, particularly in light of the hypothesis of M. Halle, who has claimed (1971) that accentual phenomena on the surface level of Slavic languages are the result of two distinct components or levels in the grammar — the morphology and the phonology. More specifically, Halle claims that information associated with individual lexical elements determines where stress will be marked in the underlying phonological representations of words; the phonological rules, in turn, determine the pitch or stress contour of the phonetic representation of the word, on the basis of the morphological marking or stress-assignment. Halle, in his paper, discusses largely accentual alternations of the nominal paradigms of the Slavic dialects; he also deals primarily with the phonological rules involved in producing these phenomena, largely leaving aside the question of the morphological rules which determine the input to the phonological component proper, and the problem of how the lexicon is to be marked by features which determine the original accenting of underlying representations. The purpose of this paper is, in part, to discover whether Halle's theory, and the rules he proposes, can account for the accentual patterns found in the Slovene verbal system, and also to see what morphological rules, of the type Halle mentions, must be posited in the grammar of Slovene to explain the certain accent-classes found in verbal conjugation.

[218] Leskosky, Richard J. 1973

Intensive reflexes

While reflexive pronouns have been analyzed and found to have important implications for transformational grammar study, the closely related phenomenon of the intensive reflexive has been ignored, perhaps on the assumption that in itself it is uninteresting or that it at least has nothing to contribute beyond the insights garnered from the study of the other reflexive pronouns. This paper will examine some of the facts of intensive reflexives, relate these to other facets of the grammar, and raise some other questions without providing any answers to them.

[219] Li, Angela W. 1970
Advisor: Michael Geis

On some Chinese syntactic rules

This paper is divided into two sections: Section I is to show whether the Chinese Topicalization Rule is subject to the constraints which Ross proposes in his dissertation. Section II is to present some data in order to get a clearer idea about the Chinese Relative Clause Formation by applying the Constraints. The four constraints are: the Complex NP Constraint, the Coordinate Structure Constraint, the Sentential Subject Constraint and the Left Branch Condition. Ross claims that the first two of these are universal. He made a further survey to find out the differences between the rules which are subject to the Constraints and the rules which are not subject to the Constraints.

In this paper I will test two Chinese rules to see if the Constraints operate in Chinese and to see whether or not we have to add some other constraints to the language-particular grammar. I have chosen two Chinese rules. They are: A. Topicalization Rule, B. Relative Formation Rule. The reasons I have chosen these two rules are because 1) topicalization is a chopping rule, 2) the Chinese Relative Formation Rule is still a mystery. If the Constraints also apply to it, it is very strong evidence to support that it involves movement; otherwise it does not.

[220] Malstrom, Jean Marie 1974

The oral narrative ability of children in grades one, four, and seven

This is a study of the development of elementary school children's ability in oral narration at three-year intervals. My purpose in this study is to examine stories told by children on three grade levels, with a view to improving their training in this area. Teachers of language arts often find the teaching of composition, oral or written, the most difficult part of their program. It calls for creativity, which is the result of hard work. I believe that if we know what grasp of the structures of language and of narrative discourse a child has acquired at various levels of schooling, we can help him to make the best use of the former to improve his performance in the latter. And so, I undertook this project to see how I might work with others to achieve such a goal.

[221] McCloy, William B. 1971
Advisor: Chin-Wu Kim

Some unsolved problems in Korean phonology

The purposes of this paper are: 1) to describe the synchronic phonology of Korean in such a way as to be optimally efficient both in descriptive and explanatory adequacy — aiming to illustrate the basic symmetry of the phonological system and the inter-relatedness of phonological rules; 2) to describe the historical sound changes that have led to present forms; 3) to relate Korean to its ancestral (and "sister") language; and 4) to evaluate and describe all the above in terms relevant to our understanding of universals in language. The task of the generative-transformational linguist extends beyond the already difficult tasks to which taxonomic linguists have always devoted themselves — observation and description: what happens in language and how. Now linguists are beginning to try to find out why things happen in language (the realm of interpretation) as witnessed particularly by recent concern to

describe "function" and "motivation" in linguistic patterning and change. I personally feel strongly that it is important to keep on looking for the what, how, and why even when simple answers are far from immediately apparent. For this reason I present in this paper not mainly solutions but problems. I feel that even though satisfactory answers have not been found for these phonological enigmas in Korean, a look at some possible or partial solutions can be beneficial — perhaps even illuminating to others who will continue the search for solutions.

[222] Meshon, Steven Philip 1966
Advisor: Braj B. Kachru

A linguistic study of sound and meaning in poetry

My central thesis is that if literary analysts, critics, critical readers, readers for simply enjoyment, etc., can make a statement about "musicality" of verse, i.e., "the hissing of the striking snake," "rapid flowing rhythms and sounds," "the babbling of the brook," "a general feeling of soft whispering sounds," etc., the sound-meaning connections can, much of the time, be taken as evidence of a very real linguistic phenomenon which is little understood, and upon which much elaboration is needed. I would like to provide several descriptive techniques by which one can, in part, account for sonority of English verse. My study will not necessarily lead to a rigid proceduralist approach toward sound in poetry, but hopefully will offer insights in the understanding of sonority and sound analysis. I believe that such a view toward poetic analysis, appreciation, and perhaps criticism will help lift the awesome, mysterious authority from one of a poet's chief tools — sound.

My paper is divided into three parts. The first is a collection of misconceived or only partly appropriate statements that literary specialists have claimed in reference to sound and sound effects. The second chapter deals with phonemic selectivity and phonemic distribution, as seen by Yeats's "Leda," and how this sonnet deviates from the prosaic norm. Chapter three presents a sketch of how syllabification can effectively be used by the poet to set up patterns of sonority.

[223] Minow, Martin 1966

Random generation of sentences from context free and context sensitive phrase structure grammars

This paper describes a set of computer programs which generate sentences from context-free (CF) and context-sensitive (CS) phrase-structure grammars. The paper is divided into three main sections: introductory comments on the linguistic assumptions reflected in the CS programs, descriptions of the overall structure of the programs and their use, and a series of appendices giving more detailed information. Future publication of flow diagrams, program listings, and sample output is planned.

The discussion which follows deals only with the CS and transformation programs. The CF program will be dealt with separately as it is completely independent of the CS programs and models a different type of grammar.

[224] Nakano, Keiko 1971
Advisor: Seiichi Makino

Notes on transitivity and subcategorization of verb-verb compounds in Japanese

In this paper, first I would like to show how the transitivity-intransitivity of verb-verb compounds in Japanese should be treated. Then, following Newmeyer, how these verb-verb compounds can be subcategorized in Japanese.

One of the big differences between English and Japanese is that some action takes two separate verbs in English but one compounded form in Japanese. Since the surface forms are distinctive in transitivity, we are interested in the transitivity when two verbs are compounded. Japanese sentences which have verb-verb compounds will be tested in this paper.

[225] Neeld, Ronald 1971

Pronouns and constraints on coreference

The occurrence of pronouns and the determination of what antecedents they refer to is one of the most difficult questions in linguistics. Vast amounts of pulp and pen-ink have been spent on discussion of the phenomena, yet no firm conclusions have been reached. In addition to the intricacy of the relation of anaphora to other grammatical phenomena, there is enormous difficulty in making judgments of relative grammaticality, as well as substantial cross-dialect variation. All statements made at this time must therefore be highly tentative. In this paper I wish to take one approach to the representation of anaphora in a grammar and explore some of the consequences. It should be recognized that the approach here is no more firmly supported than any other discussion of the topic, and probably a good deal less so than many.

[226] Paik, Keumja 1973
Advisor: Chin-Wu Kim

Tonal characteristics of Kyongsang dialect of Korean

The Kyongsang dialect in the Southeastern province of Korea has been regarded as a tone language by many Korean linguists. Although some argue whether the Kyongsang dialect is a 'registered tone language with contour overlap' or 'registered tone language without contour overlap', most Korean linguists presupposed that the Kyongsang dialect is a tone language since the dialect meets the traditional definition of a tone language as it has 'lexically contrastive pitch'.

Will the Kyongsang dialect still be a tone language in the light of a new concept of a tone language by McCawley? In this paper I will give some supporting evidence that indicate that the Kyongsang dialect is more a 'pitch-accent' language than a 'true tone' language.

[227] Peng, Wei-San Lily 1972

Explanation of the tonal change from Middle Chinese to the modern dialects

Several recent papers have discussed the tonal changes in the evolution of Middle Chinese (MC) into Modern Chinese dialects. Cheng and Wang (1971a)

discussing the Chao-zhou dialect and Cheung (1971) the Chang-sha dialect, dealt with the internal causes of these phonological changes. In this paper I will, in the same way, discuss the internal causes for the change of Middle Chinese tone III with unvoiced aspirated initials into tone II in the modern Nan-chang dialect.

[228] Pratt, Mary 1971
Advisor: Herbert Stahlke

Tone in some Kikuyu verb forms

This paper deals first and mainly with some processes of tone assimilation governing the tonal configuration of affirmative verb forms in Kikuyu. The first part of the paper deals with tonal assimilations triggered by high and low tone verb stems, pronouns, prefixes and suffixes respectively. With the support of evidence from verb-noun constructions, it is suggested that the assimilation processes in question are most naturally viewed as cyclic and that a linear approach leads eventually to false claims about the nature of the assimilations. Subsequently it is shown that the assimilation rules fall into two classes according to their behaviour in forms where vowel coalescence is operative. More light is shed on this dichotomy by the presentation of a rule of dissimilation operative under rather special circumstances. Various means of expressing the dichotomy are discussed and all found wanting.

The data for this paper has been taken from L. E. Armstrong's *Phonetic and Tonal Structure of Kikuyu* and from the *Kikuyu-English Dictionary* edited by T. G. Benson, the latter serving mainly as a source for verifying the former. All the examples given here are attested in Armstrong or Benson. In a few cases, mostly involving the tone of initial pronouns, the isolation examples cited by Armstrong differ unpredictably from the identical forms quoted later in the book in verb-noun constructions. When in doubt, I have adopted the forms given in the verb-noun examples.

[229] Satyanarayana, Pulavrthi 1969
Advisor: Yamuna Kachru

On the syntax of Honà in Hindi

This paper deals with the syntactic analysis of the verb *honà* in Hindi, which is translated as 'to be', 'to become', 'to have', etc. in English. The main body of the text has been divided into four sections. The first section is a brief survey of previous work done on *honà*, along with some comments about deficiencies. The second section attempts to give motivations for establishing different *honà's*. The third section, following the current transformational-generative grammatical model, formulates deep structures underlying the several surface *honà's* established in the second section. The fourth section comprises some concluding remarks.

[230] Shih, Celia Mou-Pin 1972

Question words in Chinese

This paper discusses two important points concerning the transformation theory on interrogations. One is that the so-called 'question formation rule' is the process of transforming the questioned elements from the underlying level to an intermediate stage which is the replacement of lexicon entries without involving the movement of those questioned elements. The 'question

formation rule', apart from the 'question movement rule' is an obligatory transformational process in all languages. With this analysis, we can account for the derivational history of interrogations in a more general way.

Another point is that the question formation rule can actually apply in sentences to almost anything, as far as the different grammatical categories are concerned. The questioned elements on the underlying level will be represented by a dummy element with a list of features from which all the WH-words in the language can be derived. The analysis here of using a dummy element as the questioned strings in the underlying structure of interrogation has a more general insight into some linguistic facts on language structure than the theory of WH-marker many linguists have proposed. It provides more consideration on the aspects from phonological, semantic, and syntactic viewpoints.

[231] Shih, Katherine I-Ping 1972
Advisor: Chin-Chuan Cheng

Phonetic nature of even-tone split in Chinese

Tone plays a very significant role in Chinese. In this paper, I will concentrate my attention on one phenomenon in tone change, which is called tone split. There are four tones in Mandarin Chinese: Tone I, Tone II, Tone III, and Tone IV, which are also called Ying Ping (Yin Even), Yang Ping (Yang Even), Shang (Rising) and Qu (Going), respectively. Certainly this is not the only tone system in Modern Chinese dialects, nor in that of the ancient Chinese. However, in comparison with MC tone categories — which are Ping (Even), Shang (Rising), Qu (Going) and Ru (Entering) — we find that the Even tone in Middle Chinese is split into two tones: Yin Even and Yang Even in Mandarin. This paper is focused on the tone split in Even tone. I shall discuss the correspondences between Middle Chinese and Mandarin Chinese and try to give some credible explanations.

[232] Shimizu, Katsumasa 1969

Some classes of noun modifiers in Japanese

The aim of the present study is to examine the syntactic structure of noun modifiers in Japanese in terms of generative grammar, the basic theory of which was systematically and successfully developed by N. Chomsky, and to attempt to formulate the rules to generate them.

In the past ten years, study of the theory of a language has developed remarkably and many attempts have been made to apply the theory of generative grammar to languages other than English. The application to Japanese is by no means new. In the present study, however, we would like to consider the generation of noun modifiers in terms of the assumption that they are mainly generated by the process called relativization.

[233] Skousen, Royal 1971

Topics in Finnish phonology

In closed syllables most consonant clusters ending in a stop will be altered. Any liquid or nasal before a double consonant will not affect gradation of the geminate consonant cluster. In addition, gradation cannot apply to an initial consonant cluster. In general terms, it appears that liquids and glides do

not affect gradation: p→v, t→d, and k→ø. We could write three separate rules for this gradation process, one for each stop. If *k* is preceded by either a liquid *l* or *r*, or *h* and followed by a front unrounded vowel, then k→j.

The problem is that we need a natural explanation for these and other rules in Finnish. This paper will consider several natural solutions to problems in Finnish phonology.

[234] Su, Maria Shu-Hsiang 1971

Chinese classifiers

A long time ago people had noticed the difference between classifiers and nouns; however, classifiers were usually put into the category of nouns. Li Jing Syi called them "measures" because they denote the quality of nouns. Now, "measures" are widely adopted by grammarians. Some grammarians called them "adnouns" or "auxiliary nouns." Whatever they called them, one thing they wanted to make clear was that they are not nouns but they are used with nouns. We call them "classifiers" in this paper because we emphasize the fact that they separate nouns into different categories according to their semantic regularities. Also, we are not concerned with so-called "measures for verbs" since they are quite different from those of nouns. Furthermore, we put emphasis on what Chào called "Individual measures."

[235] Surintramont, Aporn 1973
Advisor: Charles W. Kisseberth

Some aspects of underlying syllable structure in Thai

Word games are interesting to phonologists in general for the reason that they are a phenomenon of language which may reveal phonological rules operative in the language and thus may be helpful to phonologists in working with the language. To others, namely anthropologists, sociologists and psycholinguists, this kind of verbal play is meaningful for its deviation from common linguistic usage. This deviation sometimes expresses the characteristics of the society and its culture: it is a particular manner in which society, due to conventional regulations or cultural taboos, chooses to express its experience.

In this paper, we wish to investigate some phonological aspects of Thai through this word game. We hope that the evidence from the game will help us to gain a clearer understanding of the nature of the underlying structure of Thai syllables going beyond what has been proposed in the literature. Our tentative proposals concerning the phonological constraints on syllable structure will involve aspects of tone in Thai. Additionally, we will try to postulate some phonological rules to account for the neutralization of tone as noted by Haas (1956).

We are unable to determine independently on phonological grounds which of the words or syllables in the sentence string will be exchanged in the word game. Semantics surely plays a crucial role in Thai puns as well as in English. But what we will try to show is how this exchange is done. Our study is based on data collected from a group of Thai students at the University of Illinois.

[236] Tsitsopoulos, Stamatis 1966

Aspects of Modern Greek phonology

According to the generative theory of language, the phonological component of a grammar consists of *ta* set of partially ordered rules that related surface structures (i.e. the final outputs of the syntactic component) to phonetic interpretation. These rules are divided into redundancy, transformational and phonetic, applied in this order. The first group fills in for each segment the features that were left unspecified in the lexicon by virtue of their non-phonemic character. The third group transforms binary features into multi-valued ones, thus yielding a phonetic transcription.

In this paper we will be mainly concerned with rules of the second type. More specifically, we will discuss a set of cyclical rules whose application entails the following procedure:

> Rules apply first, in their marked order, within the innermost pair of labeled brackets. When the end of the cyclical rules is reached, (i.e. at the end of a cycle), the aforementioned brackets are erased and the same set of rules applies over again within the presently innermost pair. Where no more brackets are left in the utterance, we pass to the post-cyclical rules.

[237] Walsh, Robert Emmet 1971

The Intrusive Velar in the Romance present tense

The appearance in certain Spanish verbs of an unexpected -g- in the first person singular present indicative and throughout the present subjunctive poses a vexing problem for the historical investigator. The occurrences of this intrusive velar element can be grouped into three categories — those of the types *tengo, salgo,* and *caigo.*

In this paper we observe the very similar development of *teneò, valeò, cadeò,* etc. in other Romance languages. After a cursory examination of the Spanish dialects, we describe the situation in Castilian. Each of the major problem areas will be examined, with pertinent data from the various Romance languages playing an important role.

[238] Wentz, James P. 1972
Advisor: Herbert Stahlke

Kanuri verb morphology

Kanuri is an East-Saharan language spoken by the Kanuri of Bornu Province just west of Lake Chad in northeast Africa. Most of the nearly two million speakers of this language live in Yerwa and Dikwa and the country surrounding these cities. Since most of the data under analysis have been taken from Lukas' grammar, our discussion will center around the Yerwa dialect which he studied. Although much would be gained no doubt from an in-depth crosslinguistic study comparing the various dialects of Kanuri, our primary concern in this paper is for the synchronic phonology of Kanuri alone. In particular, we will limit discussion mainly to the verbal morphology and the rules needed to generate the various verb forms in Kanuri.

[239] Wilson, Dan A. 1965
Advisor: Robert B. Lees

Disjunctive conjunction in English: An outline

This paper consists of a basic study of the syntax of conjunction with BUT, and a brief examination of the semantic necessities involved. The problem of conjunction appears, at first glance, to be quite simple syntactically, and quite complex semantically. Although I believed this to be the case when I began developing this paper, the gradual evolution of the content considerably altered my opinion. I feel that when all of the syntactic complexity of conjunction is resolved, the semantics will be extremely simple.

The discussion of some "counterexamples" to this thesis will serve both to introduce its content and to illustrate the "semantic" difficulties involved in conjunction in general, though conjunction with BUT is the only kind about which this paper makes claims of reasonable accuracy.

[240] Yingphaibul, Duanngarm 1984
Advisor: Braj B. Kachru

Contextualized language teaching: English texts for military school in Thailand

This paper is an attempt to use sociolinguistic insight to design appropriate courses and texts for the military school in Thailand. The research is based on the Royal Thai Armed Forces Preparatory Academy, which is considered the gateway to the higher level of other military schools such as: The Air Force Academy, The Royal Thai Army School, The Naval School, and The Police Academy.

This research will focus only on the teaching of English in a special area, namely, English for military purposes. In the case of English for military purposes, the designed program will permit the Precadets and Cadets to read textbooks in their specific field of study. Moreover, as officers-to-be, they are also to be trained to perform their jobs properly in English when needed.

A portion of this study will look at the sociolinguistic background of the people involved, namely, the Precadets and the English language instructors in the Royal Thai Armed Forces Preparatory Academy. In addition, teaching materials used in this institute, including textbooks and supplementary activities designed for the Precadets will be discussed in detail.

An attempt is also made to answer the following questions:

(1) What will be the appropriate texts for the Precadets?
(2) What will be the appropriate approach for teaching ESP to the Precadets?
(3) What implication can be found in the Precadets' achievement and failure in relation to Bernstein's theory of the varieties of language?
(4) What an be done in order to prevent such a failure in learning the language of the Precadets?

[241] Yoon, Young Ja 1968
Advisor: Theodore Lightner

Phonological rules in Korean

The purpose of this paper is to describe the phonological behavior of Korean within the framework of generative phonology. Only the obligatory

phonological rules of Modern Korean will be discussed; thus, no optional rules will be introduced. The conclusion includes a list of the phonological rules which have been discussed in the paper. The dialect used in this study is my native dialect of Seoul. Neither dialectal nor ideolect differences will be considered.

[242] Zimnie, John Anthony 1975

A contrastive analysis of sentential noun phrases in English and French

Contrastive analysis has long figured as a pedagogical tool in the foreign language classroom. Yet the nature of its contribution remains a subject of controversy. On the one hand its value is seen to lie entirely in its explanatory power: problems areas identified through error analysis and shrewd classroom observation are traced to their source via an investigation of the contrasts that exist between the target and native languages. A more powerful claim is that contrastive studies are themselves capable of predicting which errors will occur through a careful comparison of the structure and rules of the two languages. This claim has been criticized for numerous reasons: e.g., areas of greatest contrast are not necessarily those of greatest difficulty to the learner; and vice versa, while it may be claimed that similarities between L1 and L2 will facilitate learning, experience shows that when the two languages share a great many features, interference is frequently maximized and confusion on the learner's part increased.

This paper deals with the current controversy. I assume that a great number of errors made by American students of French are absolutely unavoidable. These include mistakes regarding the grammatical gender of French nouns, agreement between noun and adjective, the proper shape of verb stems and endings, and to a certain extent correct word order, e.g., ADJ + N in English versus both ADJ + N and N + ADJ in French. These errors are the result of imperfect memorization of a vast amount of information idiosyncratic to French. There are errors, however, which from the generative standpoint are the result of differing transformational histories of roughly equivalent sentences in the native and target languages. It is with the prediction of this kind of error that I am concerned. To that end a discussion of sentential subjects and complements in French and English is presented. The results of this comparison will indicate that beyond some initial similarities, the treatment of sentential elements in the two languages differ markedly.

[243] Ziv, Yael 1973

Relative clause extraposition: Some observations

In this paper I have attempted to investigate some aspects of extraposition of relative clauses. In the first part I have attempted to show that extraposition of relative clauses applies only to restrictive relative clauses. I have also tried to explain why this should be the case. The second part of this paper is devoted to the analysis of some sentences with extraposed relative clauses. It is claimed that some such sentences are more acceptable than others, and there are attempts at discovering the factors which play a crucial role in determining the acceptability of such sentences. The third and last part of this paper deals with the relations between restrictive relative clauses that modify generic NP's and the matrix sentences.

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Newsletter

1994

The annual **Newsletter** of the Department of Linguistics at the University of Illinois at Urbana-Champaign appears each summer and contains information on the preceding academic year, including Departmental Personnel, Honors and Recognitions, Instructional Programs, Research and Service, Public Events, Individual Recognition and Projects, and Departmental Publications.

Beginning with the 1994 issue, we would like to feature a new section, News from Alumni. We encourage (actually, beg) all former students, faculty, or staff members of the Department to drop a note with any information they would like to share with us and with other former members of the Department to:

The Editor, Annual Newsletter
Department of Linguistics, 4088 FLB
University of Illinois
707 S. Mathews Avenue
Urbana, IL 61801

e-mail: huffman@ux1.cso.uiuc.edu
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It is always a pleasure to hear from former students, colleagues, and friends, so do not be bashful, write us today!

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